THE SUPPLEMENTAL APPROPRIATION BILL, 1959

HEARINGS

BEFORE

SUBCOMMITTEES OF THE COMMITTEE ON APPROPRIATIONS HOUSE OF REPRESENTATIVES

EIGHTY-FIFTH CONGRESS

SECOND SESSION

Printed for the use of the Committee on Appropriations

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08-321

THE SUPPLEMENTAL APPROPRIATION BILL FOR 1959

SUBCOMMITTEE ON TREASURY-POST OFFICE DEPARTMENTS APPROPRIATIONS

J. VAUGHAN GARY, Virginia, Chairman

OTTO E. PASSMAN, Louisiana	GORDON CANFIELD, New Jersey
ALFRED D. SIEMINSKI, New Jersey	EARL WILSON, Indiana
TOM STEED, Oklahoma	

TREASURY DEPARTMENT

WEDNESDAY, JUNE 18, 1958.

WITNESSES

EDWIN L. KILBY, COMMISSIONER, BUREAU OF THE PUBLIC DEBT
ROLIN J. DOWNIE, BUDGET OFFICER, BUREAU OF THE PUBLIC DEBT
RALPH KELLY, COMMISSIONER, BUREAU OF CUSTOMS
FRANK B. GATCHELL, JR., BUDGET OFFICER, BUREAU OF CUSTOMS
U. E. BAUGHMAN, CHIEF, UNITED STATES SECRET SERVICE
REAR ADM. J. A. HIRSHFIELD, ASSISTANT COMMANDANT, UNITED STATES COAST GUARD
COMDR. E. D. SCHEIDERER, BUDGET OFFICER, UNITED STATES COAST GUARD

Mr. GARY. The committee will please come to order.

I desire to report that Mr. Passman, one of the distinguished members of this committee is the chairman of the Foreign Aid Subcommittee and is holding a hearing of that committee this morning which prevents his attendance at this committee.

RESIGNATION OF HON. BENJAMIN F. JAMES

At the outset, I want to announce the resignation from the committee on June 11, 1958, of Mr. James, one of our very valuable members. Although he is still a Member of the Congress, he had a very serious operation and on account of his health he had previously announced that he would not run for reelection this year. Because of his health, he resigned his committee work. Mr. James has been an exceptionally valuable member of this subcommittee. He was elected to the committee on January 15, 1951, and has served on it since that time. He was particularly helpful in reviewing the budget of the Bureau of Printing and Engraving and some of the other bureaus where printing and engraving were involved. In addition to that, he is one of the finest gentlemen that I ever knew and I want to take this opportunity to express my very sincere regrets that we will no longer have the pleasure of his membership on the committee.

Mr. CANFIELD. Mr. Chairman, I second every word that you have just uttered in compliment to our retiring member, Mr. James, who has served this committee so faithfully and effectively for 7 years.

Recently I heard Ben James say that he had retired three times and each time voluntarily. When he said that, he meant that some years ago he was called into the service of his home town and had a position of leadership in that community for some 8 years. He retired after being elected to the State legislature where he served another 8 years and after retirement from the State legislature he was elected to the Congress and now he is retiring from the Congress after a 9-year period of service, 7 of them on this committee.

As you say, Mr. Chairman, he was a very valuable member of this subcommittee and he brought to the committee a vast background of experience in business. He was an authority on printing, banking, and in the business world generally.

He was, you might say, our Ben Franklin. In fact, his name is Ben Franklin James and he is still the chairman of the board of the Franklin Printing Company of Philadelphia, which was founded by Poor Richard himself. He is one of the most conscientious men that I have known and I regret no end that he now feels that he must leave us, mainly because of reasons of health. He has a most charming and devoted wife and I wish Mr. and Mrs. James many years of happiness in retirement. I do want to express the hope also that he will be coming back to see us now and then, and when he does, to give us the benefit of his advice.

Mr. STEED. Mr. Chairman, I would like to join in what you gentlemen have said about Mr. James and I would like to say that I have had the good fortune to encounter him this morning and had a nice visit with him. He was in a very cheerful mood and while he regrets that he cannot carry on his committee work, he is taking good care of his health and was in better spirits today than I have seen him for a long time.

Mr. GARY. That is fine. We are very glad to hear that.

SUPPLEMENTAL BUDGET ESTIMATES FOR 1959

The committee this morning meets to consider supplemental estimates contained in House Document No. 394 amounting to $9,454,000 for the Treasury Department for fiscal year 1959; $1,600,000 for the Post Office for 1959, and $3 million for the Post Office for 1958.

We will insert Treasury and Post Office paragraphs from pages 23, 24, and 25 of the document referred to in the record at this point.

(The pages referred to follow:)

"TREASURY DEPARTMENT

"BUREAU OF THE PUBLIC DEBT

"ADMINISTERING THE PUBLIC DEBT

"For an additional amount for 'Administering the public debt', $1,500,000."

Additional funds were granted in fiscal year 1958 to cover (1) increased charges by the Federal Reserve banks acting as fiscal agents of the Treasury Department; (2) additional fees to commercial banks for redeeming more savings bonds than anticipated; and (3) additional costs attributable to the printing of securities to carry out the increased public debt financing required during the fiscal year. This proposed supplemental appropriation is to meet these increases in the fiscal year 1959.

"BUREAU OF CUSTOMS

"SALARIES AND EXPENSES

"For an additional amount for 'Salaries and expenses', $150,000."

This proposed supplemental appropriation is needed to cover the additional cost during fiscal year 1959 of wage-board pay increases granted June 1, 1958.

"UNITED STATES SECRET SERVICE

"SALARIES AND EXPENSES, WHITE HOUSE POLICE

"For an additional amount for 'Salaries and expenses, White House Police', $54,000."

The use of offices in the Executive Office Building by members of the White House staff requires the extension of protection by the White House Police force to those offices. This estimate is to provide the additional funds necessary to permit recruitment of, and purchase of uniforms for, 11 additional officers to man the 3 posts of duty which will be established to provide 24-hour protection for approximately 24,000 square feet of space.

"COAST GUARD

"OPERATING EXPENSES

"For an additional amount for 'Operating expenses,' $6,900,000: *Provided, That appropriations to the Coast Guard for 'Operating expenses,' shall hereafter be available for payment of claims as authorized by Public Law 85–255, approved September 2, 1957.*

"RETIRED PAY

"For an additional amount for 'Retired pay', $700,000."

The two foregoing proposed supplemental appropriations are needed to provide for the cost of military pay increases as authorized by Public Law 85–422, approved May 20, 1958, which is effective June 1, 1958.

The additional proviso for "Operating expenses" is to enable the payment of claims authorized by Public Law 85–255, approved September 2, 1957.

"ACQUISITION, CONSTRUCTION, AND IMPROVEMENTS

"For an additional amount for 'Acquisition, construction, and improvements,' $150,000, to remain available until expended."

Provision was made in the 1958 appropriation act for the construction of a Coast Guard facility, Manhattan Island, N. Y., so that Pier 9 could be returned to the city of New York for commercial use. On May 2, 1958, while this facility was under construction, a New York City ferryboat collided with one of the piers, resulting in approximately $150,000 damage. Funds are needed for repairs in order to allow completion of the project.

"*GENERAL PROVISION*

"*Notwithstanding the limitations of any other Act, the maximum amount allowable for the purchase of any passenger motor vehicle may be exceeded, during the current fiscal year, and when authorized by the Secretary of the Treasury, by the net extra cost of any special features or equipment which, while affecting the operation of the vehicle as a passenger-carrying vehicle, are required to render it suitable and safe for the adequate performance of criminal law enforcement or police-type activities, by the United States Secret Service, the Bureau of Narcotics, the Bureau of Customs, the Internal Revenue Service, and the Coast Guard.*"

This proposed provision is needed to authorize the purchase of special features or equipment required for automobiles used in law enforcement or police-type activities.

"POST OFFICE DEPARTMENT

"(Out of postal fund)

"ADMINISTRATION, REGIONAL OPERATION, AND RESEARCH

"For an additional amount for 'Administration, regional operation, and research', $1,600,000."

This proposed supplemental appropriation is to provide (1) $1,096,000 for regional operation as the savings anticipated as a result of the recent reorganization will not be effective immediately, (2) $260,000 for additional positions in Bureau of Operations headquarters incident to the transfer of personnel actions of fourth-class postmasters and rural carriers to headquarters and increases in workload, and (3) $244,000 for additional positions in the Inspection Service due to expanded activities involving depredations and mail fraud.

"TRANSPORTATION

"For an additional amount, fiscal year 1958, for 'Transportation', $3,000,000."

This proposed supplemental appropriation is to provide for the payment of increased rail costs resulting from the Interstate Commerce Commission approval of an adjustment in rates for western and southern railroads. The total additional cost amounts to $14,000,000; however, the difference between the cost and this request has been absorbed within appropriations available to the Department.

BUREAU OF THE PUBLIC DEBT

ADMINISTERING THE PUBLIC DEBT

Mr. GARY. First, we will take up the request of the Bureau of the Public Debt. The appropriation for this Bureau for 1958 was $46,946,000 and the appropriation for 1959, $44,500,000. The supplemental estimate is $1,500,000 and the proposed total for 1959 would be $46 million.

We will insert pages 8 through 13 of the justifications at this point in the record.

(The pages referred to follow:)

SCHEDULE OF SUPPLEMENTAL APPROPRIATION AND REVISED ESTIMATES

Administering the public debt, Treasury Department, May 14, 1958

1.	Present appropriation or estimate		$44,500,000
2.	Total amount available		44,500,000
3.	Obligations:		
	1st quarter		11,676,000
	2d quarter		11,730,000
	3d quarter		11,344,000
	4th quarter		11,250,000
4.	Total obligations		46,000,000
5.	Less total amount available		44,500,000
6.	Estimated supplemental required		1,500,000
7.	Estimated supplemental included in latest budget		----------
8.	Date needed:		
	For obligation, Sept. 30, 1958.		
	For expenditure, Oct. 15, 1958.		
9.	Estimated expenditures from supplemental:	*In budget*	*Revised*
	In this fiscal year (1959)	----------	$1,500,000
10.	Actual obligations last 3 months:		
	February 1958	----------	5,309,272
	March 1958	----------	2,672,781
	April 1958	----------	2,954,167

General Statement

This Bureau of the Treasury Department is responsible for administering the public debt. It administers the laws and regulations pertaining to public debt financing within the framework of the fiscal policies determined by the Secretary of the Treasury. The Bureau's primary concern is with the issuance, servicing, and retirement of Government securities. It also has a general responsibility in the conduct or direction of transactions in public debt issues of the insular governments and of those Government-owned corporations for which the Treasury acts as agent.

The appropriation granted to the Bureau provides, in addition to the administrative costs of the Bureau, operating funds for the United States Savings Bonds Division, a separate organizational entity directly responsible to the Secretary for promoting the sale of United States savings bonds. The appropriation also includes funds for reimbursing the Federal Reserve banks, on an actual cost basis, for services performed in their capacity as fiscal agents of the Treasury; funds for payment of fees at stipulated rates to banks and other financial institutions for redeeming savings bonds; and funds for payment to the Post Office Department for services performed as issuing agent for savings stamps and for issuing savings bonds to the public in certain localities where other public facilities are not available.

Departmental headquarters of the Bureau are in Washington where, in addition to general executive direction and bureauwide administration, transactions relating to all securities other than savings bonds are conducted or directed; offices concerned exclusively with transactions relating to savings bonds are located in Chicago, Ill., Parkersburg, W. Va., New York, N. Y., and Cincinnati, Ohio. In the interest of economy of operation, the New York office is being consolidated with the Cincinnati office at the beginning of the fiscal year and the future workload will be diverted to the Cincinnati office.

PURPOSE AND NEED FOR SUPPLEMENTAL FUNDS

The purpose of this supplemental is to permit the Bureau to reprogram its work for fiscal 1959 and to develop, at the beginning of the fiscal year, a financial plan and a work program that is more realistic in terms of currently known operating conditions and fund requirements.

At the present time, the Congress has appropriated, Public Law 85–354, March 28, 1958, the amount of $44,500,000 for fiscal 1959. This amount is only $100,000 less than the amount requested by the Bureau when it appeared before the Congress last January. However, the basic work volume and estimates of operating costs that were used in that budget estimate had been developed over a year ago and are no longer valid. Certain cost factors not known or not foreseeable at that time now confront the Bureau which, in the aggregate, total to an additional $1,500,000 over the amount appropriated. Whereas it was thought that we needed only $44,600,000 to fully process all the then estimated work volume, it now appears abundantly clear that it will cost $46 million to process all work based on current volume estimates.

Should it be necessary to develop a financial plan and a request for annual apportionment to the Director of the Bureau of the Budget, as required by law, based on the $44,500,000 currently appropriated, it would be necessary to begin the year with a work program based on backlogging work, reducing service, and separating trained and efficient personnel. This could only have costly results to the Government in the long run and could not be considered prudent management of funds or effective administration.

The additional funds herein requested would permit the development of a sound financial plan for the year envisioning the complete processing of all current work during the year and certain backlogged operations that regrettably have had to be carried over from fiscal 1958.

INCREASED COSTS

Most of these additional costs which directly bear on the need for additional funds at this time relate to increases in estimates of the workload which were discussed with this committee in April when the supplemental request for 1958 funds was presented. Among these are: increased redemption of savings bonds on which stipulated fees are paid to qualified paying agents; increased costs in the Federal Reserve banks acting in their capacity of fiscal agents of the Treasury; increased costs of processing other Treasury securities resulting from substantially heavier public debt financing which is anticipated in 1959.

On the whole, the regular costs of the Bureau's operations have been reduced by reason of improved procedures and organizational changes. This is reflected in the estimated reduction in the number of employees on the roll in the original 1959 budget. Continuing efforts will be made during the year to reduce operating costs. However, at this time, it is sincerely believed that the full $46 million will be needed to completely process all currently estimated work volume.

Analysis of present revised estimate as compared with 1959 original submission

Appropriation or estimate	1959 estimate original		1959 estimate revised	
	Cost	Percent	Cost	Percent
Administering the public debt:				
Bureau of the Public Debt:				
Operating expenses:				
Personal services	$10,254,000	23.0	$10,154,000	22.1
Other objects of expenditure	5,573,000	12.5	5,823,000	12.6
Total, operating expenses	15,827,000	35.5	15,977,000	34.7
Reimbursements:				
Fees paid to paying agents	10,850,000	24.3	11,200,000	24.4
Services performed by Federal Reserve banks	10,500,000	23.6	11,400,000	24.8
Post Office Department:				
Savings stamp and bond sales	801,000	1.8	801,000	1.7
Penalty indicia mailings	1,150,000	2.5	1,150,000	2.5
Registered mailings	400,000	0.9	400,000	0.9
Total, Post Office	2,351,000	5.2	2,351,000	5.1
Total reimbursements	23,701,000	53.1	24,951,000	54.3
Total, Bureau of the Public Debt	39,528,000	88.6	40,928,000	89.0
United States Savings Bonds Division:				
Operating expenses:				
Personal services	3,487,565	7.8	3,487,565	7.6
Other objects of expenditure	1,584,435	3.6	1,584,435	3.4
Total, United States Savings Bonds Division	5,072,000	11.4	5,072,000	11.0
Grand total appropriation or estimate	44,600,000	100.0	46,000,000	100.0
Reduction	100,000			
Present appropriation	44,500,000	100.0	46,000,000	100.0

SPECIFIC ITEMS OF INCREASE

(1) *Federal Reserve Bank service costs.*—In the original 1959 budget estimate, an amount of $10,500,000 was requested for reimbursement to the Federal Reserve banks on an actual out-of-pocket expense basis for services performed as fiscal agents of the Treasury in processing of savings bonds and other Treasury securities in Government financing. The figure of $10,500,000 was a projection of what had been an estimated cost for such service during fiscal 1958. These costs, however, were sharply increased during fiscal year 1958 which necessitated a request to the Congress for supplemental funds for this item in the amount of $900,000.

As was indicated in our appearance before you during April, the closest possible estimate indicates a requirement of $11,400,000. Information furnished by the banks during the month of January indicates that this increase in requirements is occasioned by salary increases approved for Federal Reserve bank employees and a number of other increases in costs including: the costs of handling a greater volume of savings bonds and other Treasury securities than was provided for in original program estimates; costs projected for the special handling of purchases of E and H bonds after January 1 by other than individual purchasers; and increased costs for maintaining dual records of paid paper bonds and the card bonds, which are necessary under separate procedures employed for each type of security.

We are now simply projecting the 1958 cost into 1959 and are expecting the banks to absorb the additional volume and other possible increases in salaries or other costs through improved procedures or other possible savings developed jointly between the Treasury Department and the banks.

(2) *Paying agents' fees.*—Qualified paying agents are reimbursed for redeeming series E savings bonds at the rate of 15 cents per bond for the first thousand pieces in a calendar quarter and 10 cents for each bond in excess of one thousand. The average rate paid approximates 12.5 cents per bond based on the experience of the past several years.

Included in the original 1959 budget estimate was an item of $10,850,000 for payment of an estimated 86,800,000 pieces. Although this original estimate has been adjusted upward as we have progressed with the execution of the current year's program, our best estimates at this time, based upon experience to date and recent analyses of pertinent trends by staff experts, now indicate that we have considerably underestimated the full potential load that we will actually have to handle. Our latest estimates now forecast an increase in redemptions subject to fee of 2,800,000 pieces over and above the estimates in the original 1959 budget. This increase raises the total estimate from 86,800,000 to 89,600,000 pieces and carries with it a corresponding increase in paying agents' fees of $350,000 over the original budgeted figure for this purpose.

The following table reflects the most recent economic analysis on redemptions:

Savings bond redemption volume

	Original estimates as presented in 1959 budget (September 1957)	Currently revised 1959 estimate (May 1958)
Retirements	95,000,000	97,800,000
Redemptions subject to fee	86,800,000	89,600,000
Estimated fee requirements	$10,850,000	$11,200,000

(3) *Increased cost of processing other Treasury securities.*—The original budget estimate for fiscal 1959 included an amount of $410,000 for reimbursement to the Bureau of Engraving and Printing for purchase of regular Treasury securities such as bonds, notes, certificates and bills. During fiscal 1958, as a result of heavy financing, including five bond issues, the amount required for such reimbursement is estimated to be approximately $635,000 before the fiscal year is completed. Based on the current needs and the projected unit rates our printing is estimated to cost us $660,000, which is $25,000 in excess of fiscal 1958 and $250,000 in excess of the budgeted figure for 1959.

Mr. GARY. Mr. Kilby, the Commissioner of the Public Debt is present and we will be glad to hear from him at this time.

GENERAL STATEMENT

Mr. KILBY. Thank you, Mr. Chairman.

If I may, first I would like to join the members of the committee in paying tribute to Mr. James. It has been my pleasure to appear before him as a witness during the past 7 years and I have found his questions stimulating and penetrating and I certainly join with the members of the committee in wishing him all health and happiness in the years ahead.

Mr. GARY. Thank you, Mr. Kilby.

Mr. KILBY. We appeared before you exactly 11 weeks ago today, on April 2, to justify the supplemental for fiscal year 1958. The story which we told you at that time is substantially the same story as the one which we have to present with respect to the 1959 appropriation.

The $1,500,000 that we find ourselves short for 1959 is made up broadly of about $900,000 of additional money to reimburse the Federal Reserve banks for their out-of-pocket expenses, $350,000 for paying agents' fees and about $250,000 for the additional printing of marketable securities required in connection with the heavier financing schedule with which we are faced in the year ahead.

That, in essence, is our presentation, Mr. Chairman, and I would be very happy to answer any questions.

REIMBURSEMENT TO FEDERAL RESERVE BANKS

Mr. GARY. The $900,000 will be paid directly to the banks?

Mr. KILBY. That is correct, sir.

Mr. GARY. That is being paid in accordance with the arrangements made with the banks for handling the bonds?

Mr. KILBY. Yes, sir; that is correct.

Mr. GARY. The reason for the additional amount is because you have had more redemptions than you estimated, is that correct?

Mr. KILBY. That is correct, Mr. Chairman, although the redemptions which are directly reflected in the $350,000 of fees are only one of the items of additional expense as far as the fiscal agency work of the Federal Reserve banks is concerned. The Federal Reserve banks, as you know, operate for us on an out-of-pocket basis and the work which they do covers the whole field of Government financing. In other words, they handle these large market operations for us and they take subscriptions, report them to us, make allotments on the basis which the Secretary determines, deliver the securities and conduct transactions in them over the life of the issues.

So, in addition to the savings-bond work which they do for us, there is a very substantial amount of work in connection with the large marketable issues.

PAYING AGENTS' FEES

Mr. GARY. The $350,000 item for fees is then due entirely to the amounts to be paid to the banks which handle redemptions; is that correct?

Mr. KILBY. That is paid to the authorized paying agents.

Mr. GARY. Those fees are due entirely to the increased number of redemptions?

Mr. KILBY. That is correct, and we have no control whatever over the number of pieces redeemed. Our original 1959 estimate contemplated 86,800,000 pieces for an amount of $10,850,000. Our revised estimate projects 89,600,000 pieces, or 2,800,000 pieces more than our original estimate and an amount, at the rate of 12.5 cents per piece, of $11,200,000 for the fees. This contrasts with the amount of $11,532,000 which was the cost of fees in fiscal year 1958.

We have gotten that figure firmed up since we were here last and the final total number of pieces subject to fee which were redeemed in fiscal year 1958 came to 92,456,000 pieces.

TREND IN SAVINGS-BOND REDEMPTIONS

Mr. GARY. What is the trend on redemptions of bonds? Is the number increasing or is there a slacking off some?

Mr. KILBY. I am glad to say, Mr. Chairman, that they have been slacking off somewhat since the first of the calendar year and they are going back to a more normal pattern. This increased flurry of redemptions which brought the total paid for from the fiscal year 1958 appropriation up to almost 92,500,000 pieces, which was an unseasonably high figure, has seemed to have subsided. I would say

that the estimate of 89,600,000 pieces which we now have for 1959 appears to be a pretty realistic one.

Mr. GARY. What do you attribute that increase to, Mr. Kilby?

Mr. KILBY. You will recall that we had one special situation which involved the redemption of 1,600,000 pieces by the trustees of some large employee savings plans who felt that their members should have an opportunity to exchange the 3-percent bonds, which had been bought within the last couple of years, for the new 3¼-percent bonds, because there was mathematically some slight advantage, even though it might have only been a few cents in some cases, in making that exchange. That represented a substantial part of the temporary increase which we experienced last year.

Other than that, we think that redemptions were increased somewhat, perhaps by reason of the recession, and the general tendency or the disposition to redeem savings bonds as against other liquid assets which people held.

INTEREST RATES AND MATURITY DATES, SAVINGS BONDS

Mr. GARY. The 10-year bonds paid 3 percent?

Mr. KILBY. Three percent if held to maturity; yes, sir.

Mr. GARY. Is that compounded?

Mr. KILBY. Yes, sir; that is compounded semiannually.

If I might interrupt just a moment, Mr. Chairman, and go back——

Mr. GARY. Yes.

Mr. KILBY. The 10-year bond actually carried a rate of about 2.9 percent, compounded semiannually. Then in 1952, we increased the rate to 3 percent by reducing the maturity to 9 years and 8 months.

Then in February of 1957, Congress enacted a law which permitted the Secretary of the Treasury to further increase the attractiveness of the bonds to a 3¼-percent rate, compounded semiannually, which was accomplished by reducing the length of the bond to 8 years and 11 months.

In other words, over the whole life of the program, we have sold bonds at $75 and they matured at $100.

We have regulated the interest return through shortening the term of the bond.

Mr. GARY. Some years ago, to prevent the necessity of redemption at the due date of the bond, Congress authorized the extension of the payment of the interest on the bonds that were held after maturity. However, that interest is at 3 percent; is that correct?

Mr. KILBY. Yes, sir. That is a 3-percent extension rate for an additional 10 years. That became effective on May 1, 1952.

An amazingly large number of people elected to continue to hold their bonds and automatically earn additional interest on them. I believe that of the bonds that have matured and gone into the extended maturity period since 1951, about 60 percent are still outstanding and earning interest.

Mr. GARY. But those bonds still only earn 3 percent?

Mr. KILBY. That is correct.

Mr. GARY. The owners of those bonds can, at the present time, redeem them and collect the interest to date and then reinvest that money in 3¼-percent bonds?

Mr. KILBY. Yes, sir; that is true.

I might say, as to the 3¼ percent bonds, no extension privilege has been announced by the Treasury. The matter will be considered as they approach their first maturity, but as of now there has been no commitment to extend them.

Mr. GARY. On the 3 percent bonds, is that compounded after the maturity date?

Mr. KILBY. Yes, sir; that is a compounded rate after maturity.

Mr. GARY. Six months?

Mr. KILBY. Yes, sir; each 6 months.

REFINANCING ACTIVITIES, FISCAL YEAR 1959

Mr. GARY. The other expenses other than payments to the Federal Reserve bank, and over and above those for redemptions, relate to refinancing activities and you have considerable refinancing to do this year?

Mr. KILBY. That is correct, Mr. Chairman. We have a very heavy year ahead of us.

Mr. GARY. How much of the Federal debt do you have to refinance during fiscal year 1959?

Mr. KILBY. I would be glad to put that figure in the record, Mr. Chairman.

I believe it is somewhere in the neighborhood of $80 billion of the debt which comes due within the calendar year.

In addition, of course, we are going to have to raise some new money over and above the refunding. The latest figures which I heard on deficits were approximately $3 billion for this fiscal year and perhaps as much as eight to ten billion for fiscal year 1959.

(The material referred to follows:)

The volume of refunding presently expected for the fiscal year 1959 is about $70 billion.

Mr. GARY. The other $250,000 item is for that?

Mr. KILBY. For printing the securities which will be used in that large program.

Mr. GARY. Mr. Canfield?

TRANSFER AUTHORITY

Mr. CANFIELD. Mr. Kilby, under the 1958 Appropriation Act, the Treasury had transfer authority. As I understand it, the appropriation for fiscal 1958 was $45,900,000 and through a combination of transfers the Bureau of the Public Debt is receiving $46,946,000; is that correct?

Mr. KILBY. Yes, sir.

Mr. CANFIELD. Under the 1959 Appropriation Act, you have no transfer authority?

Mr. KILBY. No, sir.

Mr. CANFIELD. Is this one of the reasons why you are here at this time?

Mr. KILBY. Mr. Canfield, last year was an extremely frustrating and difficult year for us by virtue of our not being able to plan for an orderly conduct of our operations because of the lack of money. We felt that, if we could present this need and if the money could be made available to us so that at the beginning of the fiscal year we

could plan our work accordingly, we could do a much more effective job. We would expect to pick up all of the work which is presently backlogged by reason of our 1958 situation and go through the year and end up the fiscal year 1959 on June 30, 1959, in a current situation.

Mr. GARY. Will the gentleman yield?

Mr. CANFIELD. Yes.

Mr. GARY. Even with this amount you will still have $946,000 less for fiscal year 1959 than you had available for fiscal year 1958?

Mr. KILBY. That is correct, Mr. Chairman.

FEDERAL RESERVE BANK EMPLOYEES' SALARY INCREASES

Mr. CANFIELD. Mr. Kilby, can you tell us in percentage figures what increases Federal Reserve bank employees have obtained this year?

I note in your justification you refer to the January report.

Mr. DOWNIE. In that we were referring to the letter we wrote in December, Mr. Canfield, to which we received replies from the banks in January. It was not addressed specifically to the increase in salaries of the banks. It was an aggregate increased cost.

Mr. CANFIELD. But the amount you are asking for now in the way of a supplemental includes salary increases?

Mr. DOWNIE. It does.

Mr. CANFIELD. Approved for Federal Reserve bank employees?

Mr. DOWNIE. Yes.

Mr. KILBY. I would think those increases in the past year might be in the neighborhood of 7 or 8 percent, Mr. Canfield. You may remember that in my earlier appearance I pointed out that since 1951, over a period of 7 years, there was an average increase of about 50.6 percent, which is quite a substantial increase, and an additional burden on this appropriation.

Mr. CANFIELD. When the Federal Reserve bank employees receive increases, they are not accorded them through act of Congress. They are increased through what procedures?

Mr. KILBY. By actions of the respective Federal Reserve banks. I understand that the banks are more or less constantly surveying the local labor situation and they attempt to make adjustments for their own personnel which are comparable to the salaries received by other people of comparable skills in the locality.

Mr. CANFIELD. One other question, Mr. Kilby, and this bears on the section of your Bureau which embraces the Savings Bonds Division.

SAVINGS-STAMPS SALES PROGRAM

I note that this division is endeavoring to boost its savings-stamp sales among the children of our country. Is there a major effort being instituted in that direction and do you anticipate wholesome results?

Mr. KILBY. There seems to be a very general feeling in the Treasury that it is a worthwhile project to attempt to stimulate the stamp program and to encourage schoolchildren to participate in the program.

In this meeting yesterday, at which the Lone Ranger was present, that is one of a number of things which they hope to do in that direction and they feel that they should get some rather substantial results. This is not a large program at all, in terms of dollars and

cents, because the stamps sold only run around $18 million a year, or about $1.5 million a month. There is not a lot of money involved, but they feel that the effect on the youth of our Nation in stimulating thrift is a very important program.

(Discussion off the record.)

Mr. GARY. Mr. Steed?

Mr. STEED. No questions.

REDEMPTIONS SUBJECT TO FEE

Mr. GARY. Will you bring up to date for the record the table of redemptions subject to fee appearing at page 17 of the urgent deficiency hearings of 1958?

Mr. KILBY. Yes, Mr. Chairman.

I have that table with me and it shows the final figures for both fiscal year 1957 and fiscal year 1958.

Mr. GARY. We will insert that table in the record at this point.

(The material referred to follows:)

Redemptions subject to fee

FISCAL 1957	Pieces	FISCAL 1958	Pieces
April 1956	7, 558, 989	April 1957	8, 215, 956
May	7, 537, 615	May	8, 042, 860
June	7, 393, 991	June	7, 601, 771
Subtotal ($2,792,416)	22, 490, 595	Subtotal ($2,959,515)	23, 860, 587
July	7, 662, 800	July	9, 189, 125
August	7, 926, 749	August	8, 683, 120
September	6, 891, 663	September	7, 523, 150
Subtotal ($2,795,714)	22, 481, 212	Subtotal ($3,116,505)	25, 395, 395
October	7, 373, 574	October	7, 499, 959
November	6, 768, 905	November	6, 589, 550
December	7, 464, 012	December	7, 535, 446
Subtotal ($2,702,248)	21, 606, 491	Subtotal ($2,729,024)	21, 624, 955
9-month total	66, 578, 298	9-month total	70, 880, 937
January 1957	8, 413, 252	January 1958	8, 043, 245
February	7, 327, 825	February	6, 612, 413
March	7, 570, 650	March	6, 920, 017
Subtotal ($2,901,177)	23, 311, 727	Subtotal ($2,726,942)	21, 575, 675
Grand total ($11,191,555)	89, 890, 025	Grand total ($11,531,986)	92, 456, 612

Mr. GARY. Thank you, gentlemen.

Mr. KILBY. Thank you, Mr. Chairman and members.

Bureau of Customs

SALARIES AND EXPENSES

Mr. Gary. Next we have the Bureau of Customs. The appropriations for the Bureau for 1958 were $48 million; the appropriation in 1959 is $48 million; as a supplement there is an estimate of $150,000 which will bring the proposed total for 1959 to $48,150,000.

We will insert pages 15, 16, and 17 of the justifications in the record at this point.

(The pages referred to follow:)

SCHEDULE OF SUPPLEMENTAL APPROPRIATIONS AND REVISED ESTIMATES

Salaries and expenses, Bureau of Customs, 1959

1.	Present appropriation or estimate		$48, 000, 000
2.	Additional amounts available		9, 106, 000
3.	Total amount available		57, 106, 000
4.	Apportionments:		
5.	Total apportionments and reserves		
6.	Obligations:		
	Advanced procurement in fiscal year 1958 (estimated)		340, 000
	1st quarter (estimated)		14, 566, 615
	2d quarter (estimated)		14, 405, 200
	3d quarter (estimated)		13, 812, 580
	4th quarter (estimated)		14, 131, 605
7.	Total estimated obligations		57, 256, 000
8.	Less total amount available		57, 106, 000
9.	Estimated supplemental required		150, 000
10.	Estimated supplemental included in latest budget		150, 000
11.	Date needed: For obligation, July 1, 1958; for expenditure, July 23, 1958.		
12.	Estimated expenditures from supplemental:	*In budget*	*Revised*
	In current fiscal year		143, 100
	In next fiscal year		6, 900
	After next fiscal year		
	Total		150, 000

13. Actual obligations last 3 months: None.

GENERAL STATEMENT

The salary rates of certain types of employees in trades, crafts, and manual labor occupations are established by local wage boards in conformity with the wages of comparable private employment in the community. The determinations of these wage boards are binding upon agencies having such employees in those areas.

PURPOSE AND NEED FOR SUPPLEMENTAL FUNDS

This supplemental covers a number of wage adjustments which have been made since the submission of the 1959 budget.

Location	Increase in hourly rate	Cost per year per man	Number of employees covered	Annual cost
Detroit	$0.13	$270	5	$1,350
Norfolk	.10	208	6	1,248
Baltimore	.11	229	12	2,748
	.13	270	13	3,510
Rochester	.15	312	2	624
Seattle	.11	229	5	1,145
	.09	187	1	187
Jacksonville	.08	166	2	332
Philadelphia	.15	312	12	3,744
	.14	291	20	5,820
El Paso	.13	270	1	270
Buffalo	.11	229	2	458
District of Columbia	.13	270	1	270
	.12	250	1	250
Galveston	.08	166	2	332
St. Louis	.08	166	2	332
Tampa	.11	229	3	687
Miami	.14	291	5	1,455
New York	.13	270	400	108,143
Minneapolis	.07	146	5	730
New Orleans	.10	208	30	6,240
Total permanent full-time employment				139,875
261 days				540
Group life insurance				455
Retirement contributions				9,130
Grand total			530	150,000

Customs workload continues to increase. In 1959, even with the same appropriation as was available in 1958, the absorption of additional retirement contributions and normal personnel cost increases will mean that Customs must operate with nearly 100 less man-years of employment. This supplemental will permit the retention of the employment level proposed in the President's budget and approved by the Congress. The absorption of these costs would mean the loss of an additional 30 man-years of employment to customs.

This supplemental will be applied by activity as follows:

Activity No. 1. Assessment and collection of duties, taxes, and fees	$73,410
Activity No. 2. Appraisal of imported merchandise	74,840
Activity No. 5. Analysis and identification of merchandise for tariff purposes	1,450
Activity No. 6. Executive direction	300
Total	150,000

Mr. GARY. We have with us this morning Commissioner Kelly of the Bureau of Customs and we will be glad to hear from you at this time, Mr. Kelly.

GENERAL STATEMENT

Mr. KELLY. Mr. Chairman, before we make our presentation I would like to pay a tribute to Congressman Ben James, who was my Congressman for many years. He was not only a great Congressman for his district but a great Congressman for the United States. I would be very happy to make this tribute at this time.

Mr. GARY. Thank you, Mr. Commissioner. We all agree with you, I assure you.

Mr. KELLY. Mr. Chairman, I am here to present a supplemental appropriation request for the Bureau of Customs for fiscal year 1959, amounting to $150,000. The reason for making this request is to recover a wage board increase quite general throughout the country.

Our workload has increased approximately 6 percent in this fiscal year 1958 and there is every evidence it will continue to increase during fiscal year 1959. There is every evidence that it will increase at least the same amount and we think even a greater amount.

I just visited the port of Seattle and also the port of Los Angeles and in each of those two areas the increase was over 10 percent at the present time over the corresponding period last year. We also have a problem coming up of handling jet planes which will be in service by the end of this year.

We also have the St. Lawrence seaway which will open up in 1959, and our whole business in general will increase. It is startling to me how many people are going abroad.

I bought a few geraniums last Saturday at a modest country stand. The lady who sold them to me and her daughter are going to fly to Germany next month. They have never flown before and never been abroad. That is typical of the whole country and the whole country seems to be going abroad. We have to handle them when they come in and the reason we need this increase is so that we will not have to reduce our force and so that we can handle satisfactorily the increase in travel and also in trade.

The $48 million for fiscal 1959 that you gentlemen appropriated for us, or recommended for appropriation, is the same as the preceding year, but with increased personnel costs, it will give us 94 less men than the current year.

As I stated, we can handle our job quite well with an appropriation of $48 million, but if we are forced to absorb this $150,000 it will mean a further decrease of 30 men which, again, will cause us to reduce our services by that number of people.

I am making this request for the supplemental appropriation for the Bureau of Customs and I will be very happy to answer any questions regarding our work or workload.

DECREASE IN ESTIMATED REIMBURSEMENTS

Mr. GARY. On page 15 of the justifications, additional amounts available are shown at $9,106,000. The budget for 1959 at page 799 shows these items at $9,650,000.

What is the reason for the reduction?

Mr. GATCHELL. That was a decrease in our estimated reimbursables, primarily in overtime. We brought it up to date as best we could at this time and our reimbursables are running slightly under the estimates. We have adjusted the 1959 estimate accordingly.

OBLIGATIONS FOR ADVANCED PROCUREMENT

Mr. GARY. How much of the $340,000 estimated to be obligated in 1958 for advance procurement has in fact been obligated?

Mr. GATCHELL. Mr. Chairman, I cannot say exactly how much has been obligated to date, but we have issued authorizations to obligate, and they will be obligated before the end of the year. We had authority for $150,000 in equipment and we have issued authorizations up to $145,000.

On the supplies side, we had $180,000, and we have issued authorizations to approximately $105,000.

EFFECT OF INCREASE ON EXECUTIVE DIRECTION

Mr. GARY. The wage-board adjustments, which are the indicated bases for this supplemental, appear to include two employees in the District of Columbia. Of the cost increase, these 2 account for $520.

On what basis is $300 of that ascribed to activity No. 6, "Executive direction"?

Mr. GATCHELL. One of those employees is on the collector's force at Baltimore and is, therefore, in activity No. 1, the "Assessment and collection of duties, taxes, and fees."

The other one, the $270 man, is on the rolls of the Bureau here in Washington and we get to $300 by adding his proportionate share of the additional items, such as the 261st day, group insurance and retirement contributions.

There is but one of those men in activity No. 6. The other one is in activity No. 1.

NECESSITY FOR SUPPLEMENTAL AT THIS TIME

Mr. GARY. Why is this item necessary now when there will obviously be a further increase required for classified employees pay?

Mr. GATCHELL. Sir, I can say only that we are under instructions from the Department and the Bureau of the Budget to submit this estimate at this time.

INCREASES IN CUSTOMS WORKLOAD

Mr. CANFIELD. Commissioner, it is interesting to hear your statement that it is almost startling the number of people that are traveling and so many of them going abroad these days.

You accompany that statement by figures showing an increased workload and in numerous important port areas.

Would you say that these are signs of a general betterment in conditions in our country today, economic conditions?

Mr. KELLY. There is no recession in our business, Mr. Canfield. I would say that universally I do not know of any district that does not have an increase of some size. These which I mentioned are two on the heavy side and I just happened to be there. I would say that in every district there is some increase and at least 6 percent in 1959 over 1958.

I would estimate that it would be between 6 and 10 percent. That is not only an increase in collections but an increase in activities, invoices, paperwork, people traveling, and so forth, in all of our activities.

Mr. CANFIELD. When you say further that you are operating in fiscal 1959 with 94 fewer employees and if you do not get this $150,000 additional you will be operating with another deficit of 30 employees in 1959, does that mean in any sense that essential obligations of the Customs Department will be lessened?

Mr. KELLY. No, sir; but there will be some increase liquidation and other backlogs.

Mr. CANFIELD. You will suffer?

Mr. KELLY. Yes. We will definitely slip back and we will also process people a little slower. It is again the straw on the donkey's back. You do less and less. It will not be measurable, but there will

be less work done. You cannot continually handle more business with less and less people. You will not be able to put your finger at any particular point but there will be less work done.

Mr. CANFIELD. And perhaps less revenue?

Mr. KELLY. It could very well be.

Mr. GARY. Thank you, Mr. Commissioner.

UNITED STATES SECRET SERVICE

SALARY AND EXPENSES, WHITE HOUSE POLICE

Mr. GARY. The next item is "White House Police." The appropriation for 1958 was $865,000. The appropriation for 1959 is $865,000. The supplemental estimate is $54,000, making a proposed total for 1959 of $919,000.

We will insert pages 19 and 20 of the justifications at this point in the record.

(The justification pages referred to follow:)

SCHEDULE OF SUPPLEMENTAL APPROPRIATIONS AND REVISED ESTIMATES

Salaries and expenses, White House Police

1.	Present appropriation or estimate	$865,000
2.	Additional amounts available	
3.	Total amount available	865,000
4.	Total estimated obligations	919,000
5.	Less total amount available	865,000
6.	Estimated supplemental required	54,000

7. Date needed: For obligation, July 1, 1958; for expenditure, Aug. 1, 1958.

8. Estimated expenditures from supplemental:

	In budget	*Revised*
In current fiscal year (1959)		$52,000
In next fiscal year		2,000
After next fiscal year		
Total		54,000

GENERAL STATEMENT

The White House Police force is responsible for the protection of the Executive Mansion and Grounds and is closely allied with the personal protection of the President and his family while in residence which requires continual and close cooperation with the Secret Service personnel assigned to personal protective duties.

PURPOSE AND NEED FOR SUPPLEMENTAL FUNDS

Request is made for additional White House police to extend protection to files and those offices in the Executive Office Building occupied by members of the White House staff.

Mr. GARY. We have with us Chief Baughman this morning, and we will be very glad to hear from you at this time.

GENERAL STATEMENT

Chief BAUGHMAN. Mr. Chairman and members of the committee, we are requesting the amount of $54,000 to hire 11 additional White

House Police officers to protect the files and offices occupied by members of the White House staff in the Executive Office Building.

These 11 men will cover three posts in that building. Actually there will be 3 men working during the day, 2 in the evening, and 2 in the late shift, a total of 7. In addition, we need 4 men for relief because these posts will be occupied 7 days a week on a 24-hour basis.

BASIS FOR REQUEST

Mr. GARY. Why did you not foresee this in your regular appropriation?

Chief BAUGHMAN. This developed in the last couple of months.

Mr. GARY. What caused this to develop?

Chief BAUGHMAN. Some of the officials of the White House staff have been in the Executive Office Building for a number of years, but just recently they took three-fourths of one floor and consolidated all the offices.

Of course, these members of the White House staff are in the Executive Office Building because of lack of space in the White House where, normally, they would have this type of protection.

WHITE HOUSE STAFF IN EXECUTIVE OFFICE BUILDING

Mr. GARY. In other words, part of the White House staff has been moved from the White House to the Executive Offices?

Chief BAUGHMAN, Yes, a few, but, as I said, some of these officials have been over there for a number of years, but they have been scattered around the building, and now they are in 1 section on 1 floor.

Mr. GARY. Now you have them in one section, and you have the files and records in that section?

Chief BAUGHMAN. Yes; that is correct.

BUILDING GUARDS ALREADY PRESENT

Mr. GARY. Is not that building protected by the GSA?

Chief BAUGHMAN. Yes; there are GSA guards there.

Mr. GARY. Why do you need the police there in addition to the guard?

Chief BAUGHMAN. The request was made of us to assign police officers there, and the officials who made the request stated they wanted the highest quality officers there, and that is why they wanted White House Police officers. Of course, I pointed out at that time that we didn't have the funds to hire this number of men and we would have to request the supplemental.

NUMBER OF WHITE HOUSE EMPLOYEES INVOLVED

Mr. GARY. How many employees of the Executive Office, and particularly of the White House and special-projects staff, are now housed in the building?

Chief BAUGHMAN. There are 85 full-time employees, plus additional part-time consultants. It might interest you to know that the ranking senior members of the White House staff are the Honorable Clarence B. Randall, Hon. John S. Bragdon, Hon. Rocco Siciliano, Hon.

John Stambaugh, Hon. James Killian, Hon. Clarence Francis, and Hon. Meyer Kestnbaum.

Mr. GARY. How many employees have been in this building for each of the past 3 years? Do you have those records?

Chief BAUGHMAN. No. I would say the majority there have been there for the past 3 years.

Mr. GARY. Of course, Dr. Killian is new.

Chief BAUGHMAN. Yes, sir.

Mr. GARY. Can you get us that information and insert it in the record?

Chief BAUGHMAN. Of these particular men?

Mr. GARY. No. We would like to know the number of the employees there now and, by comparison, we would like to have the number housed in the building for each of the past 3 years.

Chief BAUGHMAN. All right. I will obtain that.

(The information requested follows:)

In checking with officials of the White House staff, they stated it was difficult to give exact figures for the years 1955, 1956, and 1957 because the employees were scattered all over the building and were not in the contiguous space. They gave the following number in the building for the requested years, explaining that the numbers varied from time to time based on projects being accomplished:

1955	49
1956 [1]	143
1957	90
1958 (in the recently established contiguous area)	88

[1] Large number due to Nelson Rockefeller Foundation project.

Mr. CANFIELD. You tell us these 11 new men are to be guards for files and offices in the old State Department Building?

Chief BAUGHMAN. That is correct.

Mr. CANFIELD. And they will be under the White House Police force?

Chief BAUGHMAN. Yes.

PROPOSAL IS NEW RESPONSIBILITY

Mr. CANFIELD. Is this a new departure, in the sense that it is a new responsibility for the White House Police?

Chief BAUGHMAN. The basic statute of the White House Police reads:

To protect the Executive Mansion and Grounds and other such duties as prescribed by the Chief of the Secret Service.

In the past, we have always confined those men to the White House to protect the mansion, and, of course, to cooperate with the Secret Service in the protection of the President and his family.

Mr. CANFIELD. In a sense, is that a new assignment in that, now, White House Police will be called upon to protect files in the old State Department Building?

Chief BAUGHMAN. Yes; these are new duties. However, I should explain that I understand that when, and while I was not here at the time, President Roosevelt was in office, some White House Police officers did accompany him to Hyde Park and perform official duties there.

Mr. CANFIELD. Protecting files?

Chief BAUGHMAN. No; they had posts in and around the grounds.

COMPARISON OF PAY, GSA GUARDS AND WHITE HOUSE POLICE

Mr. CANFIELD. There are GSA guards for files and offices in the old State Department Building today?

Chief BAUGHMAN. I know that GSA has guards there. I do not know the extent of their protection.

Mr. CANFIELD. Do you know what civil-service grades they have, and what their salaries are, on the average?

Chief BAUGHMAN. A GSA guard is in grade 3. That has a starting salary of $3,175.

Mr. CANFIELD. What about a White House Police?

Chief BAUGHMAN. A White House policeman would be in what we call class 3 at $4,700.

Mr. CANFIELD. There is almost a $1,600 difference, almost 50 percent more in the pay of these guards because they have the label of the White House attached to them.

NUMBER OF WHITE HOUSE POLICE

How many White House policemen do you now have in toto?

Chief BAUGHMAN. 143 on the rolls and 10 vacancies. To overcome those 10 vacancies we work the men overtime to cover all of the posts that are necessary at the White House.

We expect within a very short time to finish our full field investigations of applicants for these 10 vacancies, but there has been a delay in Secret Service as we have been short of help, and we could not complete the investigations promptly.

PROTECTION OF THE PRESIDENT

Mr. CANFIELD. Their prime functions under the law, of course, is the protection of the President and his family?

Chief BAUGHMAN. The law does not read that the White House Police protect the President. It states: "To protect the Executive Mansion and grounds." However, regardless of that they are there to help, cooperate, and assist the Secret Service in the protection of the President.

As a matter of fact, you will recall in the shooting in 1950, when an attempt was made on President Truman, a White House Police officer was killed and two were injured, so they are just as much on duty in protecting the President as the Secret Service agents.

Mr. CANFIELD. That is right.

LOCATION OF PROPOSED NEW POLICE POSTS

Mr. GARY. Where is this building in which you will put these men?

Chief BAUGHMAN. It is the old State Building between 17th Street and West Executive Avenue, right across from the White House.

Mr. GARY. Across from the White House?

Chief BAUGHMAN. Yes.

Mr. GARY. It is not within the White House grounds proper?

Chief BAUGHMAN. No. To qualify my previous remarks, we do have a White House Police officer in that building at one post, and he is outside of what we call the mail room. It is also a check point,

this man clears anyone going back and forth between the Executive Office Building and the White House.

Mr. CANFIELD. Is this the building where the President has his press conferences?

Chief BAUGHMAN. Yes.

Mr. GARY. When the President goes there for his press conferences, however, he is accompanied by the Secret Service and he is guarded at that time by the Secret Service rather than the White House Police, is he not?

Chief BAUGHMAN. Yes, except at those press conferences we have approximately 5 or 6 White House Police officers assigned outside of the press conference room.

Mr. GARY. Which you bring over from the White House?

Chief BAUGHMAN. From the White House on a temporary basis.

TRIBUTE TO SECRET SERVICE

Mr. CANFIELD. Chief, Senator Payne of Maine made some remarks on the floor of the Senate on June 13. I read therefrom briefly:

> The fact that the Vice President and United States relations with Latin America are still whole is due in sole measure to the calmly deliberate actions of a handful of Americans, namely, the Secret Service agents who accompanied the Vice President throughout his tour. It is amazing enough that six Secret Service agents were able to fend off an aroused and fanatic mob of several hundred, but it is almost incredible to find that they did so without the use of weapons or unnecessary physical force. One can only surmise the effect of world opinion on United States prestige had one of the Secret Service agents lost his control and wounded or killed a Peruvian or Venezuelan citizen. The Vice President, himself, most eloquently described the conduct and value of the Secret Service work in a recent address to the National Press Club, in which he said:
>
> "The greatest credit goes not to me, not to the members of our party, but to the Secret Service, who showed tremendous restraint, who took a great deal of abuse, and who handled themselves magnificently."

That is a great tribute, Chief, to you and the United States Secret Service, which you head.

PROTECTION OF THE VICE PRESIDENT

This statement prompts me to ask this question: Are you mandated by law to protect the Vice President at home or abroad?

Chief BAUGHMAN. The law reads that we protect the Vice President at his request, and normally that means we might have 1, 2, or 3 agents with him, say, around the Capitol or on his visits to various affairs or at hotels at night; or when he goes out of town the local office will supplement protection.

However, when he goes out of the country, particularly visiting several countries at one time, we do augment the regular detail assigned to him because additional agents have to go in advance to these various countries to make security arrangements prior to his arrival.

I certainly appreciate those nice remarks of Senator Payne. I feel very humble.

Things were very serious there at one time and I am glad the agents did a good job.

Mr. GARY. Off the record.

(Discussion held off the record.)

POSITION CLASSIFICATION OF CHIEF

Mr. SIEMINSKI. Who sets your rating, your salary classification, Chief?

Chief BAUGHMAN. Mine or that of the Secret Service?

Mr. SIEMINSKI. Yours as Chief.

Chief BAUGHMAN. The Civil Service Commission. The Secretary of the Treasury sets it, and it is approved by the Civil Service.

Mr. SIEMINSKI. Does the Secretary of the Treasury have any law by which to adjust your compensation or is there any standard which is official for him to be guided by?

Chief BAUGHMAN. I don't know of any. You see, I am under civil service. Others might be in the same type of work, a Presidential appointee, and I know the salary is higher.

Mr. SIEMINSKI. What, in the last 10 years, has been done in the way of adjustments for the Chief of the Secret Service?

Chief BAUGHMAN. I was a grade 15 about 10 years ago. Now I am grade 17.

Mr. SIEMINSKI. This is a very difficult question for you to answer, but do you think proper adjustments have been made in your compensation in the light of world conditions and mounting tensions, and the travel of our President and other high officials to foreign countries to modify those conditions?

Chief BAUGHMAN. I might have some personal opinions, Mr. Sieminski, but, after all, these trips are made as a matter of policy, and they are set up by other officials of the Government, whether State Department or White House, and the Secret Service would have no control over them.

Mr. SIEMINSKI. We are being asked to meet at a summit conference and the leader of the Russians has asked America to prove that she wants it. It looks as if in the future, whenever we meet with leaders of the world, there will be tension; some have said it will be so for the next 50 years. I hope the Secretary of the Treasury is cognizant of the increased responsibility that your Service is taking in protecting the life, not only of the President, but of the Vice President and other members of our policy echelons.

Might I ask, Chief, when a Cabinet official goes abroad, who protects him?

Chief BAUGHMAN. No one so far as I know. Usually a State security agent will accompany the Secretary of State.

Mr. SIEMINSKI. Suppose the Secretary of State, Mr. Dulles, went to Central America as Secretary of State rather than the Vice President. What protection would he have had on this trip?

Chief BAUGHMAN. State Department agents. How many I do not know.

Mr. SIEMINSKI. When the Vice President or a high official of the Government visits a foreign country does our Embassy offer you collateral aid and protection?

Chief BAUGHMAN. Yes. At the Embassies they have Marines.

Mr. SIEMINSKI. Are they in uniform or are they allowed to go in plain clothes?

Chief BAUGHMAN. Usually in uniform. Yet on other occasions they have been in plain clothes when the President has been there.

Mr. SIEMINSKI. Can the Secretary of State ask that additional Marine help, in civilian clothes, journey to a foreign country as civilian

visitors to stand by should further Secret Service aid from them be needed? Is that within the law?

Chief BAUGHMAN. I don't know what the procedure would be.

Mr. SIEMINSKI. When we had a shooting on the House floor, immediately there was a cry to man the galleries with policemen. I mentioned then that we could have all we needed if we kept them in plain clothes, but the people of America do not want to see badges or any overt pressure-bearing manifestation of authority in the gallery. It would prejudice our legislative process.

It seems perhaps our problem is the same abroad. We do not want to offend citizens of any country; we do not offend them if we have a silent watch of marines in plain clothes to help others protect our invited officials.

Off the record.

(Discussion held off the record.)

Mr. SIEMINSKI. Does the CIA give you any help abroad?

Chief BAUGHMAN. Yes, they cooperate.

Mr. SIEMINSKI. Evidently you had little, if any, help from them on this trip in terms of information, or was it they who gave you information?

Chief BAUGHMAN. Off the record.

(Discussion held off the record.)

Mr. SIEMINSKI. The thing that impressed me as being a blind spot, in acting on information in our setup in the Vice President's visit, was why we did not have in the crowds among whom he moved, any agents provocateurs to drain off any riots that might flare up.

If an unfriendly move started toward the Vice President, we should have had some friendly brass-knuckle, lead-pipe civilians on the ground, if need be, to divert the crowd and turn it away from anger. We certainly would have done that with our police and security agents had it been anywhere in the United States and the life of the President or any foreign invited official was involved.

It seems to me that perhaps the CIA could get into the brass-knuckle brigade abroad to implement the policies set by its college graduates. Other governments have been very friendly and sympathetic to them. But they are men without teeth. I realize the brilliant job they did on the Inchon invasion. CIA was tops there. But believe me, Colonel Quinn was the brass-knuckles hero there. He worked with CIA and helped float the Tenth Army Corps that broke the back of the Pusan perimeter. Marines in civilian clothes speaking foreign languages can do much for us, too. Perhaps our expert information stays too much in the drawing rooms. We'd better get it a bit closer to the knuckle, no?

Chief BAUGHMAN. I don't know what the policy is so far as agents in foreign countries are concerned, but I do say this: CIA cooperates with us, and the information they gave us was secret.

Normally, when there will be some riot, as there was in Latin America, the police are the source of information. They know whether or not the crowd will do this or that. In this particular case, we received no advance information from the police.

Mr. SIEMINSKI. You saved the Vice President's life, Chief. Is not the test of a friendly country not so much the government and its official organs and their protection, as the sentiment of the people themselves? If we have been helpful to South America, and the

record indicates we could be more helpful, perhaps we could take a little more of the people in these countries into our confidence and count on them as our friends to buttress a wavering or uninformed government. Do you understand what I am getting at, Chief?

With our Marshall aid, and with our embassies abroad, you would think our pitch could be not so much alone to governments as it would be to people; we should be able to have a couple of standup people in every country to help us fend off harmful riots aimed at the life of any invited guest or officials.

To get back to salary, Chief, who controls the salary classification of the Chief of the FBI?

Chief BAUGHMAN. As I recall, the Congress passed legislation on his salary.

Mr. SIEMINSKI. In other words, the Cabinet official in his case does not pass on his classification, as in your case?

Chief BAUGHMAN. I am really in no position to know. You could assume that the Attorney General would have some recommendations to make, but, as I recall, some legislation was passed that the Director of the FBI received a certain fixed salary so long as he is in office.

Mr. SIEMINSKI. I want to go on record as saying that the man and the Service that protects the lives of the President of the United States and his official family certainly is deserving of every possible consideration by the Congress to help the Secretary of the Treasury, if need be, to keep you and the Service right up front in the salary parade where you belong in keeping with your mounting responsibilities amidst mounting tensions at home and abroad.

So often in America we take care of everybody except our own. We are like first sergeants. We see that everybody else is fed on the chow line, and we come last. That is as it should be. I want to make sure we do not forget you. This committee has never forgotten anyone who comes before it. And that gives Mr. Gary and Mr. Canfield an 18-gun salute each. They deserve it. One of my parting gestures would be to make sure that the Secretary of the Treasury has all the moral support he can get to give you your just consideration—not only in personnel, not only in budget, but in terms of personal recognition, and not just ribbons and awards for good conduct, but in terms of the paycheck. Who knows what your fate would have been had the Vice President been killed? But you saved his life. Congratulations. And the life of Mrs. Nixon, too.

Chief BAUGHMAN. I certainly appreciate your kind remarks, Mr. Sieminski.

Mr. SIEMINSKI. One last thing. Did it not seem strange that the Vice President was called on in his office in the Senate by the Soviet emissary as a gesture of good will? Do you remember that case a little while ago, when he phoned somebody over in Protocol or elsewhere to see whether it was proper to receive the Soviet official who was making a courtesy call?

Chief BAUGHMAN. I remember reading something about it in the papers.

Mr. SIEMINSKI. Then, you see, the Reds really ganged up on him in South America. I wonder if there has been an editorial, to your knowledge, on the double play of the Reds. They have not changed their spots. They give you the bear hug. First, they come to you, get as close to your heart as they can, and then throw their arms

around your back and try to break it, which is what they did to Mr. Nixon.

(Off the record.)

Mr. STEED. Mr. Chairman, I have a question I would like to ask off the record.

(Off the record.)

Mr. GARY. Thank you, gentlemen.

UNITED STATES COAST GUARD

OPERATING EXPENSES

Mr. GARY. The next item is "Coast Guard, operating expenses." The appropriation in 1958 was $169 million; the appropriation in 1959 was $171,700,000; the supplemental estimate, $6,900,000; and the proposed total for 1959, $178,600,000.

We will insert pages 23 through 27 of the justifications at this point in the record.

(The justification pages referred to follow:)

SCHEDULE OF SUPPLEMENTAL APPROPRIATIONS AND REVISED ESTIMATES

Operating expenses, Coast Guard, 1959

1.	Present appropriation or estimate	$171, 700, 000
2.	Additional amounts available	22, 742, 340
3.	Total amount available	194, 442, 340
4.	Total estimated obligations	201, 842, 340
5.	Less total amount available	194, 442, 340
6.	Estimated total increase required	7, 400, 000
7.	Estimated increased reimbursements	−500, 000
8.	Estimated supplemental	6, 900, 000
9.	Date needed for obligation, July 1, 1958; for expenditure, Sept. 30, 1958.	
10.	Estimated expenditures from supplemental:	*In budget* / *Revised*
	In current fiscal year	---------- / ----------
	In next fiscal year	---------- / $6, 900, 000
	After next fiscal year	---------- / ----------
	Total	---------- / 6, 900, 000

PURPOSE AND NEED FOR SUPPLEMENTAL FUNDS

1. Purpose and need

The purpose of this supplemental request is to provide $6,900,000 to cover the fiscal year 1959 cost of military pay increases as authorized by Public Law 85–422, 85th Congress, approved May 20, 1958.

2. Method of determining amount

The net amount has been determined by costing the fiscal year 1959 military personnel plan at the new pay rates provided for in Public Law 85–422.

3. Reason additional funds required

Public Law 85–422 was passed after the submission of the 1959 budget. The increased costs resulting from this law could not be anticipated in the regular budget for 1959. Appropriated funds are so closely programed as to preclude absorption of any part of this increase.

4. Explanation of language

During the period July 1, 1932, to June 30, 1934, officers were promoted without receiving an increase in the rates of pay and allowances. To authorize settlement for these inequitable losses in pay, Congress passed Public Law 85–255, which was approved September 2, 1957.

The present language of the appropriation, "Operating expenses, Coast Guard," as determined by the General Accounting Office, does not provide for the utilization of such funds for payment of these claims. Hence, it is necessary that the appropriation language be changed to allow for implementation of Public Law 85–255.

These claims total approximately $29,000, as determined by an analysis of the pay records of the individuals involved. Additional funds are not required, and it is planned to absorb the costs by minor reprograming of the 1959 appropriation.

5. Justification

Public Law 85–422, 85th Congress, 2d session, approved May 20, 1958, will become effective on June 1, 1958. This law will increase military pay and allowances for fiscal year 1959 under "Operating expenses" appropriation by $6,900,000.

The new law provides for increases in basic pay; establishment of 2 additional commissioned pay grades, O–9 and O–10; 2 additional enlisted pay grades, E–8 and E–9; special pay rates for commissioned officers in pay grades O–1 through O–3 who have had at least 4 years of active enlisted service; the establishment of optional provisions for the payment of enlisted proficiency pay; and the authorization of responsibility pay for commissioned grades O–3 through O–6 where such officers are assigned to critical positions of unusual responsibility.

The total increased fiscal year 1959 cost of this law is based on the planned total personnel strength for that year and the revised basic pay rates. Cost of the two additional enlisted pay grades and the officer responsibility pay was computed on the basis of one-half year to allow for delays in implementing these new features. Additional funds to annualize these items will be budgeted for fiscal year 1960. The estimate for proficiency pay is based upon implementation over a 4-year period. The amount requested in this estimate is for the incremental increase over the funds already provided for in the regular appropriation for 1959. The effects of the two additional enlisted grades on uniform costs, and of the revised basic pay rates on terminal-leave payments, reenlistment bonuses, and Government contribution to social security have also been included in the total computation.

Detailed computation of the increased cost is as follows:

Military personal services

Basic pay	Monthly increase based on average years of service	Average number	Average annual increase	Total increase
Commissioned:				
Vice admiral	$323.60	1	$3,883.20	$3,883
Rear admiral (upper)	273.60	9	3,283.20	29,549
Rear admiral (lower)	207.80	6	2,493.60	14,962
Captain	161.20	159	1,934.40	307,570
Commander	111.60	385	1,339.20	515,592
Lieutenant commander	55.20	432	662.40	286,157
Lieutenant	57.60	575	691.20	397,440
Lieutenant (junior grade)	34.60	425	415.20	176,460
Total		1,992		1,731,613
Warrant:				
W-4	60.20	53	722.40	38,287
W-3	59.00	115	708.00	81,420
W-2	32.60	321	391.20	125,575
W-1	42.60	379	511.20	193,745
Total		868		439,027
Enlisted:				
E-9 [1]	119.20	111	1,430.40	158,774
E-8 [1]	116.67	224	1,400.00	313,600
E-7	29.20	2,299	350.40	805,570
E-6	21.00	3,587	252.00	903,924
E-5	21.70	4,293	260.40	1,117,897
E-4	9.60	3,192	115.20	367,718
Total		13,706		3,667,483
Total basic-pay increase				5,838,123
Other increases:				
Officer responsibility pay for ½ year only				60,000
Proficiency pay for enlisted members (increase over that provided for in regular appropriation for 1959)				350,000
Initial uniform allowance for new pay grades E-9 and E-8				110,400
Attendant costs resulting from the rise in basic pay:				
(a) Terminal-leave payments and reenlistment bonus				456,477
(b) Government contribution to social-security fund				85,000
Total increased cost under appropriation "Operating expense"				6,900,000

[1] For ½ year.

Mr. GARY. We have with us Rear Admiral Hirshfield, the Assistant Commandant.

We shall be very glad to hear from you at the present time.

Admiral HIRSHFIELD. Mr. Chairman, I should like to say, first, I am sure if Admiral Richmond were here he would certainly endorse the feelings of the committee expressed by you gentlemen concerning Mr. James.

We are here today to request supplemental funds for fiscal 1959 because of the passage of Public Law 85–422, increasing military pay. Under our "Operating expenses" appropriation, the personnel shown in our budget plan for next fiscal year will cost an additional $6,900,000, while, under the retired pay appropriation, a net increase of $700,000 is requested.

Also, under "Operating expenses" we are requesting language to authorize payment of claims for back pay as provided by Public Law 85–255.

We are requesting $150,000 additional under our "Acquisition, construction, and improvements" appropriation for the repair of damage to construction work at Manhattan base. A New York City ferry struck one of our piers, on which work has been proceeding under your authorization for 1958 projects, and it is necessary to proceed with repairs before the project can be completed. Part of the pier is original Coast Guard property, while part of it is contractor's work not yet accepted by us. Since there will be many parties involved in the settlement, it will probably be some time before the claim against the city is paid. When it is, the collection will be returned to the Treasury. Other funds in this appropriation are fully programed for work proceeding on schedule. We shall be pleased to go into such detail as the committee may wish.

CLAIMS UNDER PUBLIC LAW 85–255

Mr. GARY. How many claims are expected under Public Law 85–255?

Admiral HIRSHFIELD. I think 52 is the number, Mr. Chairman. Fifty-two is the last count we had from the General Accounting Office, Mr. Chairman.

Mr. GARY. That is the number that has been received?

Admiral HIRSHFIELD. By the General Accounting Office. If my memory serves me, under that law these people file their claims directly with the General Accounting Office.

Mr. GARY. How many did you estimate?

Commander SCHEIDERER. Sir, we estimated that there were probably somewhere in the vicinity of around $35,000 worth of claims. There probably will be about 75 total submitted. To date, there have been about 52 approved.

BUDGET BUREAU POLICY ON PAY INCREASES

Mr. GARY. Why cannot this item be withheld until the estimate for civilian pay increases comes up?

Admiral HIRSHFIELD. Mr. Chairman, these are military increases.

Mr. GARY. But why should not the Congress take up all of these pay increases at one time?

Admiral HIRSHFIELD. Mr. Chairman, I do not feel that I am qualified to answer that. We were told by the General Accounting Office that we could not pay these claims out of past appropriations, which we had anticipated doing under Public Law 85–255.

Mr. GARY. That is, so far as the change of language which you request is concerned.

Admiral HIRSHFIELD. Yes, sir.

Mr. GARY. So far as the appropriation is concerned, the deficiency act does permit you to pay increases without violating that act. You could, therefore, pay your increases out of your present appropriations and then come in and ask for all of your pay increases at one time, military and civilian.

Commander SCHEIDERER. Yes, sir; we could, military and civilian. It is a matter of policy which has been laid down by the Bureau of the Budget.

RETIRED PAY

Mr. GARY. You covered all three items, if I am not mistaken Admiral. So, maybe we had better take up the other items from the justifications.

You have another item of "Retired pay." There the appropriation for 1958 was $26,400,000; the appropriation for 1959 was $27,800,000; the supplemental estimate was $700,000; and your proposed total, 1959, is $28,500,000.

We will insert pages 29, 30, and 31 of the justifications at this point in the record.

(The justification pages referred to follow:)

SCHEDULE OF SUPPLEMENTAL APPROPRIATIONS AND REVISED ESTIMATES

Retired pay, Coast Guard, 1959

1. Present appropriation or estimate		$27,800,000
2. Additional amounts available		
3. Total amount available		27,800,000
4. Total estimated obligations		28,500,000
5. Less total amount available		27,800,000
6. Estimated supplemental required		700,000
7. Date needed for obligation, July 1, 1958; for expenditure, Sept. 30, 1958.		
8. Estimated expenditures from supplemental:	*In budget*	*Revised*
In current fiscal year		
In next fiscal year		$700,000
After next fiscal year		
Total		700,000

PURPOSE AND NEED FOR SUPPLEMENTAL FUNDS

1. Purpose and need

The purpose of this supplemental request is to provide $700,000 to cover the cost of pay increases for retired military personnel in fiscal year 1959, as authorized by Public Law 85–422, 85th Congress, approved May 20, 1958, effective June 1, 1958.

2. Method of determining amount

The additional amount requested has been determined by costing the fiscal year 1959 military retirement plan on the basis of the increased pay rates of personnel retiring on or after June 1, 1958, and a 6 percent increase for applicable personnel on the retired rolls prior to that date.

3. Reason additional funds required

The new law was passed after submission of the 1959 budget. Because of a lag in the retired personnel program in comparison with the program provided for in the 1959 appropriation, the Coast Guard can absorb $900,000 of the $1,600,000 total increased cost.

4. Explanation of language

No substantive change in the appropriation language is required.

5. Justification

The new legislation provides for a 6 percent increase in retired pay for military personnel on the retired rolls prior to the effective date of the law. Consequently 8,112 persons on the retired rolls on May 31, 1958, and who are expected to stay

on the rolls throughout 1959 will receive a 6 percent increase. The planned number of accessions to the rolls after May 31 will receive retirement pay based on the new pay rates.

The total increased cost for 1959 is $1,600,000. However, because of a lag in the actual retirement program in comparison with the program budgeted for in 1959, the Coast Guard will be able to absorb $900,000 of this cost. The remaining $700,000 required in 1959 cannot be absorbed without impairment of the retirement program.

Detailed computation of the increased cost is as follows:

Computation of pay increase, 1959

	1959 budgeted annual average cost	Average increase (man-years) 1959	Percent increase	Total	Average number on roll 1959 (less attrition)	Percent increase	Total
Enlisted men	$2,212.50	187	10.4	$43,000	4,765	6	$632,500
Commissioned	4,703.42	76	18.0	64,340	2,238	6	631,560
Warrant	3,193.20	47	11.8	17,700	1,081	6	207,000
Reserve	1,770.00	3	18.0	950	28	6	2,950
Total				125,990			1,474,010
Total increase							1,600,000
Amount to be absorbed, 1959							−900,000
Total supplemental, 1959							700,000

Mr. GARY. This estimate is the result of the military pay law recently enacted, which provides a 6-percent increase in the retired pay. Is that correct, Admiral?

Admiral HIRSHFIELD. That is correct.

Mr. Chairman, also, for 1959 the people who will go on the retired list after June 1 will not be under that 6 percent, but their retirements will be based upon the increased pay. So in many cases it would amount to more than 6 percent.

ACQUISITION, CONSTRUCTION, AND IMPROVEMENTS

Mr. GARY. The next item is "Acquisition, construction, and improvements." The appropriation for 1958 was $15,895,000, the appropriation for 1959 was $18 million, the supplemental estimate is $150,000, which makes the proposed total for 1959, $18,150,000.

We will insert pages 4 and 5 of the justifications at this point in the record.

(The justification pages referred to follow:)

ACQUISITION, CONSTRUCTION AND IMPROVEMENTS, COAST GUARD

PURPOSE AND NEED FOR SUPPLEMENTAL FUNDS

1. Purpose and need

Funds were provided in fiscal 1958 for the construction of a Coast Guard facility, Manhattan Island, N. Y., so pier 9 could be returned to the city of New York for commercial use. On May 2, while this facility was under construction, a New York City ferryboat collided with one of the piers, resulting in approximately $150,000 damage.

2. Method of determining amount

The estimated amount required to repair the damage resulting from the collision has been determined by an engineering examination of the damaged pier, including underwater examination by divers.

3. Reason additional funds are required

The additional funds are required to enable the Coast Guard to complete the construction of this facility. The city of New York has requested Coast Guard to relinquish pier 9 for commercial use. The Coast Guard is not able to relocate until such time as the facility Manhattan Island has been completed.

4. Explanation of language

No substantive change in the appropriation language is required.

5. Justification

On May 2, 1958, a ferryboat owned and operated by the city of New York collided with a pier on the site of the presently under construction Manhattan base at the foot of Manhattan Island in New York City. About 50 feet of the pier was severely damaged, the concrete and stone surface torn up and shifted from its foundation. The estimated cost of repair of the damage is $150,000.

Manhattan base is being constructed to accommodate Coast Guard facilities and units presently located at pier 9, New York City. This change in location is in response to demands made by the city of New York that the pier 9 property be vacated without delay. Although a claim for the pier damages will be filed against the city of New York, it is to be expected that it may take considerable time to determine the responsibility for the damage and obtain settlement. Unless funds are made available now, the project cannot be completed while the contractor is still on the job. This in turn, will delay the move from pier 9, and also increase the ultimate cost of the project. Funds realized from the claim at a later date will be deposited to miscellaneous receipts of the Treasury.

Mr. GARY. Would you like to explain that?

Admiral HIRSHFIELD. We are presently having 2 boards of investigation, 1 of which is the type of board that we usually hold when there is damage to Coast Guard property.

Mr. GARY. The damage there was caused by a New York City boat running into and damaging one of the piers of the facility which you are constructing on Manhattan Island; is that not correct?

Admiral HIRSHFIELD. That is correct, sir. The other board, Mr. Chairman, is the type of board which we hold when a vessel has been in an accident. These two boards have not been completed yet. We really do not have all the facts at headquarters and would prefer not to take a position until we can see what the boards have to say about it.

Mr. GARY. You are not certain that a claim will be filed at all?

Admiral HIRSHFIELD. We think we will file a claim, but there is a rumor that the city of New York is going to sue us, too; so we do not know just what the upshot will be, except that very probably there will be litigation.

(Off the record.)

Mr. CANFIELD. Admiral, how many officers and enlisted men in the Coast Guard will be affected by the Military Pay Increase Act?

Admiral HIRSHFIELD. Mr. Canfield, because the people with less than 2 years' service do not get an increase, and because we have reimbursable and other programs, I would have to get that figure for you and insert it in the record. I do not know what it would be in total.

(The matter referred to follows:)

In 1959, 2,378 officers, 981 warrant officers, 16,110 enlisted personnel, and 2,932 Reserve trainees will be affected by the increase. This includes all direct appropriations, funds, and reimbursable programs.

Mr. CANFIELD. Does this act also have to do with the Reserve training pay?

Commander SCHEIDERER. Yes, sir.

Admiral HIRSHFIELD. The Reserves are covered in this, Mr. Canfield.

Mr. CANFIELD. That is all, Mr. Chairman.

LIFEBOAT STATION, OCEAN CITY, MD.

WITNESS

HON. EDWARD T. MILLER, A REPRESENTATIVE IN CONGRESS FROM THE STATE OF MARYLAND

Mr. GARY. We have with us Representative Edward T. Miller, of the First District of Maryland, one of our colleagues who is also a member of the Appropriations Committee. He desires to make a statement at this time.

We shall be delighted to hear from you, Mr. Miller.

Mr. MILLER. Mr. Chairman, I appreciate your courtesy and that of our colleagues on this subcommittee in permitting me to call to your attention a matter of serious concern to an important section of the district I am honored to represent. I realize that the situation is unusual in that this is a supplemental bill and the problem which I present was not included in the original nor the supplemental budget requests. However, because the Coast Guard project which I will briefly detail may well involve the lives and safety of local residents and visitors to our area, I feel that it is my duty to lay the problem before you and request the appropriation at this time.

The funds requested are for the lifeboat station at Ocean City, Md. This project has been fully considered and approved by the Coast Guard and for some time has been programed as necessary construction. However, I suppose because of budgetary limitations and other needs which were classified as more urgent, this item was not included in the construction program submitted for fiscal 1959. While I am not qualified to pass on the relative importance of the programs and the priorities involved, my familiarity with the situation in question causes me great concern as the lack of facilities at Ocean City might at any time result in loss of life or injuries that might be avoided. I am fully aware of the policy of this committee and the need of every possible economy at a time when our budget is out of balance, but human life and safety seem to me of greater importance than the accelerated spending involved.

The situation which confronts the resort community of Ocean City is briefly as follows:

The present Coast Guard station located there was built in 1886 and is seriously substandard and unfunctional. In recent years the holiday season population has grown tremendously and that growth has continued at an even more rapid pace since the erection of the Chesapeake Bay Bridge. Always an important commercial and sport fishing locality, the discovery and exploitation of the exceptional facilities for white marlin fishing off the coast has resulted in greatly increased numbers of fishing boats and small vessels of all sorts operating in the locality. Some years ago following one of the larger hurricanes an inlet was created as a result of the storm. It was bulkheaded and became an important boat channel. Advantageous

as this was in one respect, it cut the Coast Guard station off from direct contact with its boats so that personnel at the station must travel a distance of some 2 miles to cross a bridge in order to reach the boats required to make rescues at sea. The need and importance of the station has grown apace and at the same time its facilities have not only failed to keep pace, but because of the separation just mentioned, are totally inadequate. The necessary funds for remedying the situation have been surveyed and planned as follows:

Ocean City lifeboat station

Building	$132,000
Bulkhead and boat basin	361,500
Maintenance garage	29,500
Other site improvements	54,600
Communication system	19,000
Construction contingencies	40,400
Administrative expenses	48,000
Total construction	685,000

On March 5, last, Vice Adm. A. C. Richmond advised interested parties as follows:

> Hearings have recently been completed on the Coast Guard budget for fiscal year 1959. You are advised that this project was not included among those in the budget request on which hearings were held.
>
> However, a detailed plan for the rebuilding of this lifeboat station has recently been submitted to this headquarters, and is at this time being reviewed. It is included in the various projects being considered in the preparation of the fiscal year 1960 budget request. However, as I mentioned in my letter to you of November 15, 1957, the backlog of construction and maintenance projects of a more urgent nature is such that it is doubtful that funds will be available in the near future for this project.

As it seems obvious that these facilities are required and will be funded eventually, I am seeking an appropriation at this time in the hope that lives and property may be saved by promptly meeting this requirement. I respectfully urge the inclusion of the necessary funds in the bill now under consideration. or at least a sufficient sum to enable the work to go forward during the next fiscal year without further delay. Thank you very much.

Mr. CANFIELD. Admiral, our colleague from Maryland has discussed the subject of the lifeboat station at Ocean City, Md., in his district. It is my understanding that Admiral Richmond, the Commandant, has recently advised him that this project is included in a list of projects being considered in the preparation of the fiscal year 1960 budget request. Is that your understanding?

Admiral HIRSHFIELD. Yes, sir.

Mr. GARY. All right, thank you, gentlemen.

WEDNESDAY, JUNE 18, 1958.

POST OFFICE DEPARTMENT

ADMINISTRATION, REGIONAL OPERATION AND RESEARCH

WITNESSES

HYDE GILLETTE, ASSISTANT POSTMASTER GENERAL, BUREAU OF FINANCE
JOHN M. McKIBBIN, ASSISTANT POSTMASTER GENERAL, BUREAU OF OPERATIONS
BERT B. BARNES, FIRST DEPUTY ASSISTANT POSTMASTER GENERAL, BUREAU OF OPERATIONS
LINDSLEY H. NOBLE, DEPUTY ASSISTANT POSTMASTER GENERAL AND CONTROLLER, BUREAU OF FINANCE
DAVID H. STEPHENS, CHIEF POSTAL INSPECTOR, BUREAU OF THE CHIEF POSTAL INSPECTOR
CLARENCE N. BRUCE, ASSISTANT CONTROLLER FOR BUDGET, BUREAU OF FINANCE

Mr. GARY. We shall next take up the supplemental request in House Document 394 of the Post Office Department for administration, regional operation and research. The comparative appropriation for 1958 was $64,041,000, the appropriation for 1959 is $62 million, the supplemental estimate is $1,600,000, making the proposed total for 1959, $63,600,000.

We shall insert at this point in the record the justifications and the green sheets.

(The documents referred to follow:)

Administration, regional operation, and research, 1959

Annual appropriation, 1959	$62, 000, 000
Estimated obligations, 1959	63, 600, 000
Estimated supplemental, 1959	1, 600, 000

Analysis of supplemental request

Activity and account	Programed funds available	Revised estimate	Supplemental required
Executive direction:			
Postmaster General	$440, 000	$440, 000	
Executive assistant to the Deputy Postmaster General	164, 000	164, 000	
Headquarters services	1, 204, 000	1, 204, 000	
Subtotal	1, 808, 000	1, 808, 000	
Administration of personnel	724, 000	724, 000	
Legal service	1, 936, 000	1, 936, 000	
Inspection Service:			
Chief Postal Inspector	821, 000	821, 000	
Inspection service (field)	11, 832, 000	12, 076, 000	$244, 000
Internal audit	936, 000	936, 000	
Subtotal	13, 589, 000	13, 833, 000	244, 000
Administration of postal operations	1, 197, 000	1, 457, 000	260, 000
Administration of postal transportation	905, 000	905, 000	
Administration of postal finance	3, 613, 000	3, 613, 000	
Administration of postal facilities	1, 395, 000	1, 395, 000	
Regional operation	31, 759, 000	32, 855, 000	1, 096, 000
Research and engineering	5, 074, 000	5, 074, 000	
Total administration, regional operation, and research	62, 000, 000	63, 600, 000	1, 600, 000

This request for $1.6 million, in effect, represents a partial restoration of the $2,950,000 reduction made in our 1959 budget request. In their consideration of our request for restoration of the reductions made by the House of Representatives in our appropriation submission, the Senate stated in Report 1401, dated March 18, 1958, that "The request of the Post Office Department for additional amounts over the House bill for the accounts, 'Administration, regional operation, and research' and 'Facilities,' is worthy of consideration. However, it is pointed out that, under the provisions of the bill, $77 million additional will be available to the Post Office Department over the amount available for the fiscal year 1958, and, in view of the 5-percent transfer authority between appropriations granted to the Department, it appears that the Postmaster General will be in a position to work out an equitable solution to the problem."

On May 27, 1958, Public Law 85–426 was approved, which act, among other things, increased the salaries of postal field employees. The additional cost resulting from this act will create a deficiency in each appropriation from which field personnel are paid. As the only possible transfers would have come from the "Operations" appropriation, funds are not now available from this source because of the deficiency existing in that appropriation. We find it necessary to request a partial restoration of these funds because of our needs in three areas: (*a*) Regional operation, (*b*) the headquarters office of the Bureau of Operations, and (*c*) the Bureau of the Chief Postal Inspector.

Regional operation, increase, $1,096,000

We are requesting $1,096,000 supplemental for regional operation. In our submission to the Congress, we estimated that the funds needed for the operation of the regional offices in 1959 would approximate $34,709,000. At the time of the hearing, it was pointed out that the reorganization of the field service was underway and that we hoped to effect a savings through a reduction in personnel in the regional offices. Our progress in that respect has been better than we anticipated, and it now appears that we can operate the regions with $32,855,000, a reduction of $1,854,000 under that initially requested for 1959. Because of this rapid progress in our regional adjustment, we will require only $1,096,000 of funds to be restored in 1959 to this account.

Bureau of Operations, increase, $260,000

The supplemental funds requested for 1959 under this heading, amounting to $260,000, are for salaries and related costs of 34 more positions than were contemplated in the 1959 budget submission.

Twenty additional positions are required incident to the transfer of the administration of personnel actions for fourth-class-office postmasters and rural carriers from the regional offices to headquarters. These additional positions will bring the total complement assigned to this function to 70 positions, as compared with 77 positions previously authorized to administer practically the same functions prior to decentralization. In an effort to keep the work current, supervisors and others are working extremely long hours without extra compensation and have deferred taking leave. To continue this on a permanent basis would be grossly unfair to these conscientious employees. In the course of the realinement of this function, it has been possible to reduce the total regional complement commensurate with the increase at headquarters.

Seven additional positions are requested to augment the distribution and traffic function transferred from the Bureau of Transportation, and complete the transfer of this function, for which 15 positions were originally transferred and reflected in our budget submission. Four of these additional positions are required to cover the additional clerical workload incident to functions which were not previously fully performed, such as planning transcontinental distribution, following through on serious delays to mail, studies of distribution on trains, and elimination of duplicate work between post offices and terminals.

Three additional positions are required for motor vehicle management, making a total staff of six for this important function. When the function was transferred from the Bureau of Facilities, three positions and related funds were transferred, which were reflected in the 1959 budget submission. It is now apparent that three additional positions are required to effectively control the utilization—both load and usage—of motor vehicles.

Four additional positions are required to enable the present Installations Management Staff to meet the requirements imposed by the present program of acquiring new space and placing into operation improved equipment and the coordination of the needs of the various postal services affected.

Inspection service, increase $244,000

Request for this increase is due to expanded activities involving depredations on the mails, mail fraud, and other work of the highest essential priority.

The increase requested of 24 inspector positions is directly attributable to the assignment of 30 inspectors to a highly specialized mail loss investigative program. This program is producing results which represent savings to the public of millions of dollars annually. To accomplish this work vacancies are necessarily being carried in other important assignments pertaining to inspection, financial irregularities, and similar matters.

The 12 additional clerical positions required are needed for partial replacement of higher level clerical personnel who are necessarily assigned to aid in certain confidential tabulations pertaining to the expanded mail loss investigation program. The addition of these 12 clerks will also relieve inspectors from typing and other routine clerical duties, thereby releasing them for more important assignments.

The amount requested is small in comparison to the serious personnel situation confronting the service, and represents an emergency measure.

ADMINISTRATION, REGIONAL OPERATION, AND RESEARCH, POST OFFICE, 1959

Program and financing

	Presently available	Revised estimate	Difference
Program by activities:			
1. Executive direction	$1,808,000	$1,808,000	----------
2. Administration of personnel	724,000	724,000	----------
3. Legal service	1,936,000	1,936,000	----------
4. Inspection and internal audit	13,589,000	13,833,000	+$244,000
5. Administration of postal operations	1,197,000	1,457,000	+260,000
6. Administration of postal transportation	905,000	905,000	----------
7. Administration of postal finance	3,613,000	3,613,000	----------
8. Administration of postal facilities	1,395,000	1,395,000	----------
9. Regional operation	31,759,000	32,855,000	+1,096,000
10. Research and engineering	5,074,000	5,074,000	----------
Total obligations	62,000,000	63,600,000	+1,600,000
Financing:			
Appropriation or estimate	62,000,000	63,600,000	+1,600,000

Obligations by objects

		Presently available	Revised estimate	Difference
	Total number of permanent positions	7,873	8,114	+241
	Full-time equivalent of all other positions	52	52	----------
	Average number of all employees	8,105	8,347	+242
	Number of employees at end of year	7,873	8,114	+241
01	Personal services:			
	Permanent positions	$47,761,199	$49,242,669	+$1,481,470
	Positions other than permanent	196,819	196,819	----------
	Other personal services	1,294,804	1,300,397	+5,593
	Total personal services	49,252,822	50,739,885	+1,487,063
02	Travel	2,819,616	2,830,616	+11,000
03	Transportation of things	103,227	103,227	----------
04	Communication services	120,744	120,744	----------
05	Rents and utility services	55,000	55,000	----------
06	Printing and reproduction	71,679	71,679	----------
07	Other contractual services	1,266,514	1,271,792	+5,278
08	Supplies and materials	188,531	188,531	----------
09	Equipment	3,478,000	3,478,000	----------
11	Grants, subsidies, and contributions	3,075,309	3,171,968	+96,659
13	Refunds, awards, and indemnities	1,552,083	1,552,083	----------
15	Taxes and assessments	16,475	16,475	----------
	Total obligations	62,000,000	63,600,000	+1,600,000

Average salaries

	1957 actual		1958 estimate		1959 estimate	
	Number	Total salary	Number	Total salary	Number	Total salary
General schedule rate: Average GS grade and salary	8.3	$6,266	8.6	$6,466	8.7	$6,579
Postal field service rate: Average PFS level and salary	7.7	5,732	7.9	5,903	7.8	6,049

GENERAL STATEMENT

Mr. GARY. We have with us Mr. Hyde Gillette, the Assistant Postmaster General, Bureau of Finance, and we shall be very glad to hear from Mr. Gillette at the present time.

Mr. GILLETTE. Thank you, Mr. Chairman.

I have a statement here which summarizes our problem for the committee, which I would like your permission to read.

Our request pending before this committee today is for additional funds in 2 appropriations, 1 in fiscal 1958 and 1 in fiscal 1959. For "Transportation, 1958," we are requesting an additional $3 million, and for "Administration, regional operation, and research, 1959," an additional $1,600,000.

The need for the supplemental funds in the transportation account arises as a result of the rate increases granted to western and southern railroads by the Interstate Commerce Commission on December 30, 1957. As you know, these new rates provided for an increase of 7.5 percent retroactive to July 1 of last year. We estimate that the cost for the current fiscal year will approximate $14 million, excluding any increase for the eastern roads, on which the Interstate Commerce Commission has not yet acted.

In the 1958 column of the fiscal year 1959 budget we pointed out that we expected to absorb not less than $9 million of this increased cost through a transfer of appropriated funds from operations in the amount of $7 million, plus an additional $2 million that we felt could be saved in the transportation appropriation. The transfer from operations was made and we now find that we can absorb an additional $2 million in transportation or a total absorption of $11 million, leaving a deficiency of $3 million which must be provided by supplemental appropriated funds.

We had hoped originally that a supplemental request for this additional $3 million would not be necessary, since it might have been possible to transfer from the operations appropriation, under our transfer authority, the relatively moderate amount involved. However, the recently enacted legislation increasing the salaries of all postal field employees has taken up any savings that may accrue in the operations appropriation and has created a deficiency in that appropriation. This obviously leaves no funds available for transfer to any other appropriation. Because of this we find it necessary to request the funds needed to pay for this small portion of the $14 million rate increase, which was added since the time of the original budget presentation in 1957.

Our request for $1.6 million of additional funds for the appropriation "Administration, regional operation, and research for the fiscal year 1959," is largely a request for restoration of a portion of the $2.950 million reduction made by the Congress. This reduction

apparently was on the premise that the savings from reorganization in the regional offices would all be effective in 1959. Because of the many complex problems encountered in this reorganization of the 15 regional offices, we cannot fully implement it by July 1. You will recall, Mr. Chairman, that I touched on this in the hearings (p. 73, House hearings) when I mentioned that any savings that would accrue from the reorganization would be spread over a period of several years. In our appeal to the Senate (p. 110, Senate hearings) we pointed out that we hoped to implement savings of $600,000 in the regional offices in 1959. I am pleased now to report that a subsequent review and more exact programing cause us to feel that savings of $1.854 million can be made, reducing the requirement for this account from $34.7 million to $32.9 million.

Following our presentation of this problem to the Senate in requesting a reconsideration of our need for this appropriation among others, the Senate Appropriations Subcommittee chairman stated in his report No. 1401 dated March 18 that, while the amounts that we requested to be restored to "Administration, regional operation, and research" were worthy of consideration, inasmuch as we have the 5 percent transfer authority between appropriations, it would appear that the Postmaster General could work out an equitable solution to this problem. Since that date, however, the enactment of pay legislation has, of course, created a deficiency in the operations appropriation from which we might have expected funds to be available for transfer. Here again, we feel that the technical deficiency status of the operations appropriation precludes our resorting to the transfer authority.

Since submission of the justification for 1959, two other special problems have developed: the need for a small but critical number of additional personnel in the headquarters office of the Bureau of Operations, and an urgent need for a minimum addition to the Inspection Service under present conditions. The amounts involved total $504,000, and we are in effect asking the committee's permission to keep this amount out of the savings we are making in our regional reorganization. In round figures, we propose to save $1.854 million, we require $504,000 of these savings as above, and we would have left a net savings of about $1.350 million. Subtracting this from the reduction of $2.950 million intended to reflect reorganization savings originally anticipated by the Congress for fiscal 1959, we have a balance of $1.6 million which we request be restored to this extremely tight appropriation. The need for each of these is covered in the justifications, and Mr. Stephens and Mr. McKibben or Mr. Barnes, who are present, will further explain the problems upon which these needs are based.

We shall, of course, be glad to submit any additional information or data you will require.

Mr. Chairman, in view of the fact that Mr. Stephens has a plane to catch, I would like to ask your indulgence to hear his additional testimony, if any, before we hear any other witnesses. Of course, he is available for any questions you may care to ask.

INSPECTION SERVICE

Mr. GARY. We shall be very glad to hear from Mr. Stephens at this time.

Mr. STEPHENS. Thank you, Mr. Chairman and gentlemen.

This request is simply to meet urgent needs incident to the assignment of personnel to some of our more critical programs in the Inspection Service. We have a constant manpower problem, I think I can accurately state, but within recent months we have found it necessary to inaugurate a couple of specialized programs, one of which pertains to added attention to mail losses. This request could be directly related to the assignment of 30 inspectors nationally to deal with a certain type of mail losses. We borrow them, of course, from other assignments in which we have arrearages.

While this number of additional inspectors is relatively small compared to our needs—it is, you will note, less than 1 for each 2 States—if we were to be deprived of this assistance it would be a considerable problem for us. Twelve of these thirty-six added positions requested are clerks, less than one per inspection division, to be used in tabulating certain mail losses and preparing reports, to relieve inspectors from actually typing their reports.

We had hoped to provide for this number next year by savings made in regional office personnel.

MAIL FRAUD CASES

Mr. GARY. How many mail fraud cases do you have now?

Mr. STEPHENS. Mail fraud cases will number several thousand outstanding at this time throughout the country. Some of them are very complicated cases, involving large sums of money. There is a very significant increase in the number of mail fraud complaints covering various schemes, not only of merchandising but insurance frauds and frauds involving various financial transactions. They are becoming a very large program and problem, for us.

REMOVAL OF LIMITATION ON INSPECTORS

Mr. GILLETTE. Mr. Chairman, If I may interject one word here, in your committee's Report No. 1431 on our fiscal year 1959 appropriation, you said in part:

> In recognition of the presently programed decreasing administrative personnel the committee will not continue to insist on the limitation—

that is, the limitation on the number of inspectors—

> but hopes that the Department will exercise reasonable prudence in permitting increases in the number of inspection personnel.

The reason I mention this, Mr. Chairman, is solely to express my personal opinion that the Inspection Service has attempted to observe both the letter and the spirit of the committee's injunction to exercise reasonable prudence in permitting any increases. We hope you will feel that we have taken your injunction seriously, as we really have done in asking for this additional number now of only 24 inspectors and 12 clerks.

We recognize that we have a responsibility for watching these matters extremely carefully, and that you have given us this responsibility.

MAIL FRAUD INVESTIGATIONS, 1954–58 AND PRIOR YEARS

Mr. GARY. Mr. Stephens, can you furnish us with statistical information showing the increase in mail fraud complaints and the number of cases outstanding at the present time?

Mr. STEPHENS. I would be glad to, and we shall be glad for you to know about the situation.

Mr. GARY. Also the number handled. Insert a table of statistical information showing that, and give us a comparison of the last 5 years, if you have that available.

Mr. STEPHENS. We shall be glad to do that.

(The information requested follows:)

Fraud investigations

Fiscal year	Total investigations authorized	Investigations completed	Investigations pending June 30
1958 (estimated)	11,056	8,031	3,025
1957	9,528	6,774	2,754
1956	9,098	6,630	2,468
1955	7,754	5,480	2,274
1954	7,768	5,570	2,198
1933	5,065	3,592	1,473
1932	5,154	3,535	1,619
1931	5,176	3,728	1,448
1930	6,004	4,886	1,118
1929	5,319	4,408	911

NOTE.—It is estimated that approximately 20,000 mail fraud complaints will be received at headquarters level in Washington during fiscal year 1958.

MAIL LOSS INVESTIGATION PROGRAM NOT NEW

Mr. GARY. In your justification, you say that you have assigned 30 inspectors to a highly specialized mail loss investigative program.

Mr. STEPHENS. Yes, sir.

Mr. GARY. When was that program developed?

Mr. STEPHENS. We have been developing it over the past year, but it was implemented late last calendar year and it is really now beginning to gain some momentum.

Mr. GARY. Had you planned to go ahead with that in your 1959 budget when it was submitted?

Mr. STEPHENS. It was in process of implementation. Of course the extent to which we had to assign manpower was not too well known to us. The demands on manpower properly to cover this situation exceed somewhat our earlier estimates. We have now assigned to it, and we believe we need an absolute minimum of, 30 people nationally.

Mr. CANFIELD. Your counterpart, the Chief of the Secret Service, was before us a few moments ago. He told us that forgery of checks and securities was increasing tremendously.

Mr. STEPHENS. That is true.

Mr. CANFIELD. You tell us today that the theft of mail from mail boxes in the cities and towns of America is greatly on the increase.

Mr. STEPHENS. There is a constant increase in the theft of mail matter from house receptacles, and the forgery of money orders, and the passing of checks obtained from stolen mail. The manpower assigned to these offenses is necessarily increasing. The results obtained are that for the fourth year in succession arrests have been on the increase. At the moment we have an increase of approximately 480 arrests this current year over the comparable period of last year.

Mr. CANFIELD. There are various racketeering developments involving the use of the mails which concern you very deeply?

Mr. STEPHENS. Complaints from the public on various fraudulent schemes, the misuse of the mails in unlawful schemes, in the transmission and sale of obscene and pornographic material are increasing rapidly. In each of these areas the work is increasing very rapidly. I think our experience is shared by other law-enforcement and investigative groups.

Mr. CANFIELD. And you have a backlog in all of these categories?

Mr. STEPHENS. We have what we consider a serious backlog. We are trying to arrange our work in the best possible priority, but we have what we consider is a serious backlog and delay.

UNORDERED MAIL SALES PROMOTION

Mr. GARY. Several weeks ago some company in Los Angeles sent out a lot of letters apparently to the lawyers in the city of Richmond. I do not know why they selected lawyers.

Perhaps this had better go off the record.

(Discussion off the record.)

Mr. STEPHENS. Mr. Chairman, your experience is typical of that of many other professional groups. They do select attorneys, physicians, and other professional groups to assemble mailing lists. This material is mailed unordered and it is exactly as you describe it to be. Much of it is obscene and there are many, many tons of it which is highly objectionable material. Much of it is going into the hands of juveniles, and much of it is fraudulent in its form of advertising.

Mr. GARY. This letter in itself was not obscene but you were invited to order various series of pictures described in the letter which would then be mailed to you. They intimated that the pictures were so bad that they might not be able to get by the mails.

I hope that you can reach the outfit which is sending out those advertisements.

Mr. STEPHENS. It is a problem, Mr. Chairman, and I can assure you that we have many congressional and other complaints. We are devoting all the time and effort that we can to it. We have the problem then of successful prosecution and the problem of being able to sustain fraud order action. We have injunctions immediately lodged when we attempt to bar the material from the mails.

As you know, we have been seeking legislation and Congress has acted favorably upon legislation which we think will aid in the prosecution at the point of delivery of certain of this obscene and objectionable matter.

COMPARISON OF REPORTED LOSS OF MAIL

Mr. SIEMINSKI. Would you care to make, at your own convenience and time, a comparison of your caseload in the current abuses of mail privacy with the years 1929, 1930, 1931, and 1932, to see if there is any pattern setting in?

The Chief of the Secret Service said that counterfeiting is on the rise. You have just laid off several people of 30 years service, and I wondered if you were making any research on those layoffs to see whether any financial distress in those families might have caused them to take this route.

Mr. STEPHENS. I would be glad to do that.

Mr. SIEMINSKI. Thank you.

(The material referred to follows:)

Comparison of reported losses of mail

Fiscal year:	
1958 (estimated)	544, 330
1957	530, 500
1956	534, 422
1955	542, 785
1954	576, 333
1933	242, 497
1932	271, 078
1931	320, 783
1930	330, 844
1929	311, 972

EDITOR'S NOTE.—See also Comparisons of Fraud Investigations, p. 40.

Mr. GARY. Thank you, Mr. Inspector.

We will recess at this time until 2 o'clock this afternoon.

AFTERNOON SESSION

Mr. GARY. The committee will come to order.

Now, Mr. Gillette, I have a few questions.

SAVINGS RESULTING FROM END OF LEASE-PURCHASE

How much will be saved by eliminating planning and construction for lease-purchase projects?

Mr. GILLETTE. I am not sure that I understand your question.

Mr. GARY. How much will be saved by eliminating planning and construction for lease-purchase projects. That law has expired.

Mr. BARNES. It would be negligible.

Mr. GILLETTE. Mr. Chairman, the effect on the Post Office Department would be negligible. As I recall, we had only 48 projects altogether approved—and of that total I believe we did not expect all to finally materialize. So it would not have any effect on our 1959 budget because the implementation of the number we had approved under the law was reflected in the 1959 budget submitted to this committee. I might refer you in furtherance to your question to page 190 of the hearings of this committee on the appropriation request for 1959.

Mr. GARY. The Independent Offices appropriation bill eliminated all lease-purchase funds and provided no further sums should be expended.

I understand that there is going to be some modification of that language by the conference committee, and under this modification you will be permitted to complete certain projects but others will be eliminated. Would that affect your finances any on your planning?

PLANNING COSTS FOR LEASE-PURCHASE

Mr. GILLETTE. Mr. Chairman, we would, of course, expect to carry on with those projects which had top priority by using our commercial leasing program. The commercial leasing program revised to accommodate these few projects considered in the 1959 budget would have an insignificantly lower annual cost than the lease-purchase program. I would be glad to submit for the record a statement as to the effect of this legislation specifically.

Mr. GARY. I wish you would.

(The information follows:)

PLANNING COSTS FOR LEASE-PURCHASE BUILDINGS

Planning costs for lease-purchase buildings consist principally of architectural and engineering fees. These are provided from funds budgeted as part of rent costs in the appropriation. Although they are originally paid in part by the Post Office Department, they are repaid to the Department by the successful bidders, and therefore are later available for other rental costs. Successful bidders on new buildings constructed for straight leases use these same services, and these costs are amortized in their rental charges as they are in buildings rented under the lease-purchase program. Other planning costs in the Department are no different for lease-purchase buildings than they are for leased buildings. These comprise studies to determine space, location, and equipment requirements.

As to construction costs, these are represented by the rent payments made after the building is actually occupied. The 1959 budget provides only for buildings which will be occupied during that fiscal year. Projects in the development stage would not have been completed in 1959, and there is no provision in the budget estimate for rent costs on these buildings. Even if such costs would have been incurred, the Department's policy has been to use lease-purchase only when the rent costs are comparable to those for leased buildings. Therefore the rent estimates in the budget would provide for no greater funds than would normally be provided for leased buildings.

ESTIMATES ASSUME EMPLOYMENT JULY 1

Mr. GARY. How much can the estimate be reduced by reason of not inducting new personnel on July 1? The green sheet shows 241 new positions on the rolls for an average of 242 man-years.

Mr. GILLETTE. The 241 apparently new positions shown on the green sheets represent simply a conversion into positions of the $1.6 million we are asking to be restored of the $2.950 million reduction by the Congress. The Congress apparently anticipated we could eliminate about 460 positions by July 1, in our regional reorganization. We now feel that we can eliminate around 289 positions in the field which, less the 70 new positions required in the Inspection Service and at Headquarters, make it necessary for us to ask for 241 positions back from the 460 cut out of our budget. Our original budget request, Mr. Chairman, in the administration appropriation which we presented to this committee for the fiscal year 1959 had no increase at all in the positions but did have a slight increase in man-years over 1958.

Mr. BRUCE. In the green sheets we show the difference between the amount that is available in the budget as reduced by the Congress

and the amounts covered by this estimate; $1,096,000 is for the regions which have the greatest number of people on the rolls in this appropriation, and is merely the difference between the number of personnel we could provide under the present amount of money we have and the amount that we are now asking for. Part of that is additional inspectors and operations people, but the major portion is people in the regional offices presently on the rolls. This supplemental will bring the number up to a point where we think we can operate. They are not new people per se at all, except those in the operations and inspections service.

Mr. GARY. But there are still 66 new positions in there.

Mr. BRUCE. That is correct, sir, 70 to be exact. They are in the inspection service and headquarters operations, which are covered by this justification.

Mr. GILLETTE. That is a total of 34 for operations, Mr. Chairman, and the 24 inspectors plus 12 clerks for the inspection service.

NO CHANGES IN PRESENT PROGRAM IN OTHER THAN FIELD ACTIVITIES

Mr. GARY. Why is there no change in activities and accounts other than "regional operations" as compared with the 1959 budget?

Mr. NOBLE. Mr. Chairman, we are showing an increase in our request over available funds of $244,000 in inspection, $260,000 in the headquarters of postal operations, and $1,096,000 in the regional operation account.

Mr. GILLETTE. The reason there is no change in the other programs of administration, regional operation, and research is one that I can give a very clear answer to because we have searched through the appropriations for an opportunity to make savings. The appropriation was submitted on an austere basis to this committee because it contained no increases in any headquarters personnel over 1958; in fact, it contained a net decrease of one compared with 1958, and also because the regional operation personnel was confined to exactly the same figure as in 1958 as well as the headquarters personnel under the administration personnel ceiling.

The man-years were slightly different as explained at the time of our justification because of turnover and that sort of thing. But the individual accounts which we would be glad to review with you, one by one, for each of the individual bureaus, we scrutinized with great care hoping that we could absorb more of this $2,950,000 cut made by the Congress in some of the other accounts, and, because we had no increase in spite of increased loads and increased duties, we were unable to find any real hope of making savings in the other accounts.

Of course, the cut of $2,950,000 was, according to our understanding, intended to reflect proposed savings in the account entitled "Regional Operations" rather than in other accounts. However, as I said, we did scrutinize other accounts in an attempt to absorb part of that cut.

REVISED PROGRAM INDICATES NO CHANGE IN TRAVEL, ETC.

Mr. GARY. Why is there no change in objects classes 02, 03, and 04, as compared with the 1959 budget?

Mr. NOBLE. The changes requested relate only to salaries. We believe that our estimate for travel and other expenses stay the same

with the exception of the inspection service, where travel is increased $11,000. The other objects that relate to personal services, such as insurance and civil-service retirement, are of course increased in relation to the salary increase.

Mr. GARY. Under your original estimate in the budget the average number of all employees was 8,565. You show in the green sheets now there are only 8,105 presently available. If you reduce your manpower to that extent should not there be some reduction in the travel, transportation, and probably some reduction in communications, and possibly in the social-security taxes and assessments?

Mr. GILLETTE. May I ask Mr. Bruce to answer your question?

Mr. BRUCE. These items are not affected directly by personnel changes either up or down. They are more related to units, facilities and items of that nature that are affected by the employment, but not directly related to the number of people involved. It is very difficult to gage it exactly. The travel goes up and down with the number of inspectors and those in the region, but communications, transportation and contractual items and such as that are not directly related to the number of people.

EMPLOYMENT REQUESTED IN ESTIMATES

Mr. GARY. How many employees are you requesting altogether in this supplemental?

Mr. GILLETTE. We are requesting the committee's consideration of using some of the savings and some of the positions saved by virtue of the regional reorganization involving the closing of district offices to fill an urgent need in the inspection service and in the Bureau of Operations to the extent of 36 positions in the inspection service and 34 positions in the Bureau of Operations.

I think this committee should have further justification for the Bureau of Operations' positions so they may fully understand the problems involved in the need for these positions in view of the fact the committee, I am sure, recognizes that in the past we have tried to reduce rather than increase headquarters personnel, and in the 1959 budget, as I said, we had a net reduction of one in our overall headquarters personnel.

Mr. BARNES. Mr. Chairman, in operations, the fourth-class postmasters appointment and disciplinary cases and the rural carriers appointment cases were returned to the Department after having been decentralized. The information could not be obtained fast enough in the field, and to satisfy many of the congressional leaders we brought that work back to the Department. We are merely asking now for sufficient numbers of people to keep this work current as it was before we decentralized. If we get what we are asking for here we will have 70 people to do this work whereas we originally had 77 to do practically the same work.

As of the moment we are in considerable arrearage in our work, as much as 2 months in some instances. Our people work unusually long hours and some on Saturdays and Sundays in attempting to keep it up. We simply cannot do it, with the present staff. As you understand, this was brought in from the field late last year.

Mr. GARY. You mean for reporting?

Mr. BARNES. It is the appointment and discipline of postmasters and the appointment of rural carriers and the evaluation of postmasters' work. That is being done here now instead of in the field.

Mr. GARY. Where is it being done?

Mr. BARNES. In the Bureau of Operations here at the Post Office Department.

Mr. GARY. That does not come under personnel?

Mr. BARNES. No. It is in the Bureau of Operations. Postmasters and rural carriers are under operations, not personnel.

Mr. GILLETTE. It is to carry on this function which was brought in to headquarters for the greater convenience in serving many congressional inquiries that we are asking 20 of the 34 additional positions for operations.

Mr. BARNES. That is right.

Mr. GILLETTE. As I believe the justifications show, this activity is now programed to take a total of 70 people, Mr. Chairman, whereas previously it took a total of 77 people to administer it partially in the regions and partially in the headquarters.

Mr. BARNES. Right now, for example, we have about 1,400 vacancies in the rural routes.

Mr. GARY. How many employees did it take when it was all in the regions?

Mr. BARNES. It took more than we have here. We would not be able to give you an exact figure because they performed this work in connection with other work. We could not give you a figure on that but can say it costs less here.

RECENTRALIZATION OF FUNCTION

Mr. GARY. Out of the 34 new positions requested within the Bureau of Operations account, 30 are related to transfers of functions, and 20 of these are related to the centralization of the function originally decentralized to the regions.

Mr. BARNES. Yes.

Mr. GARY. How is it possible that transferring functions within an appropriation requires more employees to do the same job?

Mr. BARNES. It does not. Less employees are actually needed.

Mr. GILLETTE. I think the answer to your question is it does not require more employees than were in our 1959 budget. But since the Congress cut this appropriation $2,950,000, Congress reflected a reduction of about 450 positions in this appropriation, so what we are saying is while we will make the 460 saving eventually we cannot make that saving entirely in 1959, and of the savings we can make, which in dollars amounts to an estimated $1,854,000, we would like to have a little of it back with your permission to cover these spots in the Bureau of Operations. But the effect, Mr. Gary, is that we are still much better off than we were under the 1959 budget.

In other words, we are making savings and we are going to have considerable savings left over even if our request for keeping 34 positions in the Bureau of Operations is granted. Stated another way, we are making savings in the field and of these savings we would like to have 34 credited to the Bureau of Operations.

Mr. GARY. By reason of the fact that you are transferring some of these operations in the field to the Bureau of Operations, you are going to have to increase the personnel in the Bureau to that extent?

Mr. GILLETTE. Yes.

Mr. GARY. You will have some reduction in the field, will you?

Mr. GILLETTE. We will have very considerable reductions in the field resulting not only from the elimination of these functions in the field—which is germane to your question—but also, Mr. Chairman, resulting from the closing of the district offices which Mr. McKibben estimated to save a total of 460 positions in his testimony before this committee in reference to the 1959 appropriation request.

Mr. BARNES. It boils down to this—we were cut about 460 people. We will not be able to save 460 people in the field next year. As you recall, we testified previously that we could probably not save more than about $1 million, but as a matter of fact, we are going to be able to save about $1,854,000, which means approximately 289 people in the field, but we do need from that 289, 34 additional employees at headquarters in the Bureau of Operations to do the work which was transferred from the field.

OBLIGATIONS AND BALANCES

Mr. GARY. Will you insert the obligations and unobligated balances for each appropriation as of the latest available date?

Mr. GILLETTE. We will do so.

(The matter referred to follows:)

Obligations, 1958

[In thousands]

	Actual obligations July 1, 1957, to May 30, 1958 (excluding pay increase legislation [1])	Unobligated balance May 30, 1958 (excluding pay increase legislation [1])	Pay increases legislation [1] Jan. 11, 1958, to June 30, 1958
Administration and research	$19,932	$4,926	$667
Operations	2,402,486	252,034	116,450
Transportation	442,408	41,454	36
Finance	3,473	526	161
Facilities	142,837	33,910	357
Total	3,011,136	332,850	117,671

[1] Public Laws 399, 426, 432, and 462.

NOTE.—Obligations include reimbursement of $18,986.

TRANSFER AUTHORITY TO BE USED

Mr. CANFIELD. If you had the money now for your increase in pay of your postal workers would you still be before us in furtherance of a request of this nature?

Mr. GILLETTE. I believe we would not, Mr. Canfield, because I believe that the Congress intended for minor problems of this sort—relatively minor problems—the transfer authority would clear up this type of situation. In fact, the report of the Senate Subcommittee on Appropriations referred to the possibility of our using our transfer authority. But because of the fact that the increase in wages of the postal employees took place after the appropriation was granted us, and thereby threw the operations appropriation into a deficiency status in effect, we thought, and the Bureau of the Budget ruled, that we should come before the Congress for this request.

Transportation, 1958

Mr. Gary. We will insert into the record at this point the justification for the amount requested for transportation for 1958.

(The justification pages follow:)

Post Office Department

Transportation, 1958

Annual appropriation, 1958		$648,000,000
Supplemental appropriation, 1958		24,000,000
Current appropriation, 1958		672,000,000
Transfer of functions to Operations	−$208,117,000	
Transfer of funds from Operations	7,000,000	−201,117,000
Adjusted appropriation, 1958		470,883,000
Estimated obligations		473,883,000
Estimated supplemental		3,000,000

Analysis of supplemental request

Activity and account	Reprogramed funds available	Revised estimate	Supplemental required
Bureau of Transportation	$914,000	$914,000	
Powerboat service	2,852,000	2,852,000	
Foreign mail transportation	11,159,000	11,159,000	
Mail messenger service	20,294,000	20,294,000	
Star route service	43,962,000	43,962,000	
Short haul truck service	13,437,000	13,437,000	
Highway post offices	5,849,000	5,849,000	
Railroad service	305,290,000	308,290,000	$3,000,000
Domestic air mail service	40,304,000	40,304,000	
Foreign air mail service	18,707,000	18,707,000	
Terminal and transportation charges by foreign countries	7,935,000	7,935,000	
Repair and alteration	180,000	180,000	
Total transportation	470,883,000	473,883,000	3,000,000

On December 30, 1957, the Interstate Commerce Commission in docket 9200 granted rate increases to the western and southern railroads. These new rates granted to the western railroads are an increase of 7.5 percent retroactive to July 1, 1957. The southern railroads were granted increases of 6 percent for the period July 1 to August 31, 1957; and 13.5 percent from September 1, 1957.

In the 1959 budget submission it was estimated $9 million of the added cost could be absorbed by an appropriation transfer of $7 million from operations and $2 million savings in the transportation appropriation.

Present estimates indicate that the total cost of these rate increases will approximate $14 million for fiscal 1958. The Department has been able to absorb an additional $2 million of this amount. In light of the obligation pattern which has developed since February of 1958, it is now apparent that this is the maximum amount which can be absorbed, and a supplemental appropriation of $3 million is required for the remainder of fiscal 1958. If it had not been for the recently enacted pay legislation it would have been possible to finance this deficiency by transfer of savings in the operations appropriation which must now be applied to the pay increase.

Mr. Gillette. Mr. Chairman, may I observe at this point that our request for a supplemental for transportation for 1958 has slightly more urgency because, of course, it is designed to cover the possible contingency of our being in violation of the Antideficiency Act in the event our current projection is fully materialized.

I should like to say, Mr. Chairman, we feel this additional request will give us a small margin of safety which will probably do no more than pick up the obligations that will come in after July 1. We hope that obligations reported prior to the end of the year will fall within our 1958 available funds, but it is going to be a very, very close margin; and we feel, having already absorbed $11 million of the $14 million of the increase in rates for the southern and western roads, that we would not be safe to report to you that the money in the transportation appropriation was clearly sufficient to cover our estimated obligations for 1958.

(Discussion off the record.)

USE OF TRANSFER AUTHORITY

Mr. GARY. Mr. Gillette, I am quite sure that the committee will appropriate the $3 million that you are requesting for transportation. That seems to be an item that there is an urgency for at the present time. However, I for one do not agree with the Bureau of the Budget that it is necessary to appropriate these other items at the present time because the law specifically provides that any increases in salaries authorized by the Congress can be paid without violating the anti-deficiency law.

We have got to take up at the beginning of January all of the salary increases. We will have to make appropriations for the increase in military pay, for the increase in civilian pay, and for the increase in postal pay, and I think that it is better legislative procedure for the Congress to handle all of them at one time. Therefore, it is entirely possible that we may reject these other items at the present time. Then when you come up with your pay increases in January we will know better where we stand and we can appropriate with greater understanding of what the problem will be and what the needs will be for the entire year. I see no reason why the salary increases should interfere with your normal operations or affect your operations in any manner.

Mr. CANFIELD. It is my understanding from your statement then that the Post Office Department is not precluded from exercising its transfer authority to carry out these essential functions and provide the adequate labor therefor?

Mr. GARY. Certainly not. And the law expressly provides that the payment of these salaries which have been authorized by the Congress will not put them in violation of the antideficiency law. If they pay out more than is appropriated for transportation they would be. The payment of the salary increases is specifically provided for in the antideficiency law.

Mr. GILLETTE. That would be an ideal solution of our problem provided it could be expressed in the committee report.

Mr. GARY. It will be. If we turn down your requests—and I am not prophesying what the committee will do, we will take that up in executive session—we will state why it is being done and state our view that it does not affect your right of transfer which has been previously authorized.

Mr. GILLETTE. That would be most helpful and constructive and would be the simplest solution of our problem.

(Discussion off the record.)

Mr. GARY. The committee will stand adjourned.

SUBCOMMITTEE ON DEPARTMENT OF DEFENSE APPROPRIATIONS

GEORGE H. MAHON, Texas, Chairman

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HAMER H. BUDGE, Idaho
MELVIN R. LAIRD, Wisconsin

WEDNESDAY, JUNE 18, 1958.

DEPARTMENT OF DEFENSE

INTERSERVICE ACTIVITIES

WITNESSES

J. A. WYLIE, CHIEF, BUDGET AND FINANCE BRANCH, OFFICE OF THE SECRETARY OF DEFENSE
LEROY J. SPENCE, MILITARY PERSONNEL OFFICER, OFFICE OF DIRECTOR OF PERSONNEL PLANNING, DEPARTMENT OF THE AIR FORCE

RETIRED PAY, 1958 AND 1959

INTERSERVICE ACTIVITIES—RETIRED PAY, 1958

Program and financing

	Presently available	Revised estimate	Difference
Program by activities:			
1. Nondisability	$301,000,000	$305,980,000	+$4,980,000
2. Temporary disability	21,795,000	22,675,000	+880,000
3. Permanent disability	184,677,000	186,947,000	+2,270,000
4. Fleet reserve	45,925,000	46,848,000	+923,000
5. Survivors' benefits	1,603,000	1,550,000	−53,000
Total obligations	555,000,000	564,000,000	+9,000,000
Financing: Appropriation (new obligational authority)	555,000,000	564,000,000	+9,000,000

Object classification

	Presently available	Revised estimate	Difference
12 Pensions, annuities, and insurance claims	$555,000,000	$564,000,000	+$9,000,000

EXPLANATION OF SUPPLEMENTAL ESTIMATE FOR FISCAL YEAR 1958

For the fiscal year 1958 Congress appropriated $555 million for the purpose of providing retired and retirement pay, as authorized by law, of military personnel on the retired lists of the Army, Navy, Marine Corps, and Air Force, including the Reserve components thereof; retainer pay for personnel of the inactive Navy and Marine Corps Fleet Reserves; and payments to survivors pursuant to the Uniformed Services Contingency Option Act of 1953. Subsequent to the submission of the requirements totaling $555 million for these purposes changes

developed which were not consistent with the estimates and were not anticipated at the time the annual estimates were submitted. These changes have resulted in an additional requirement of $9 million for fiscal year 1958.

The estimate for fiscal year 1958 was based on a year-end strength of 214,884 annuitants on the retired rolls. It now appears that these strength projections made last summer on which these estimates were based are considerably under current rates of accessions to the retired rolls. It is now estimated that the year-end strength will total approximately 219,547 annuitants, or an increase of 4,663 annuitants over the earlier projection for June 30, 1958. The earlier projections could not anticipate the further reductions in the active force levels which were directed later last fall. While forced separations are adding a substantial number to the retired rolls, more personnel than originally estimated are also electing to retire or transfer to the Fleet Reserves of the Navy and Marine Corps. Also, there has been an increase in the number of enlisted personnel electing disability retired pay rather than disability compensation from the Veterans' Administration.

In addition, a recent Comptroller General's decision (B–123643, dated March 7, 1958), while having no effect on the number of personnel, is expected to increase substantially the additional amounts required. This decision provides that officers of the uniformed services retired for physical disability who hold a permanent Reserve grade which is higher than the temporary grade in which they were serving on active duty at time of their retirement are entitled to retired pay based on the higher Reserve rank.

The revised estimate for fiscal year 1958, based on the actual and projected accessions to the retired rolls for the balance of this fiscal year, provides for a year end strength of approximately 219,547 annuitants with an average strength of 209,938 for a total cost of $564 million. Through March 31, 1958, there had been a net gain of 12,262 annuitants to the retired rolls of the 19,673 annuitants that are now expected to be added to the retired rolls this year.

There follow schedules showing (1) the actual numbers of annuitants on the rolls at the end of the past 2 fiscal years and at the end of September, December, and March of the current year and the projected number for June 30, 1958; (2) additional requirements for fiscal year 1958; and (3) a comparison of revised estimates with amounts presently available.

Number of annuitants on retired rolls

Category	Actual					Increase July-March	Estimated June 30, 1958
	June 30, 1956	June 30, 1957	Sept. 30, 1957	Dec. 31, 1957	Mar. 31, 1958		
Nondisability	87,017	97,352	101,022	103,763	106,300	8,948	111,005
Temporary disability	15,179	12,146	12,669	12,491	12,411	265	12,595
Permanent disability	67,463	66,653	68,203	67,252	67,774	1,121	69,448
Fleet Reserve	20,803	22,595	23,354	23,853	24,270	1,675	25,027
Survivors' benefits	814	1,128	1,209	1,287	1,381	253	1,472
Total	191,276	199,874	206,457	208,646	212,136	12,262	219,547

Additional requirements

Category	Actual obligations through Mar. 31, 1958	Estimated requirements for balance of fiscal year 1958	Revised estimates for fiscal year 1958	Presently available fiscal year 1958	Amount supplemental fiscal year 1958
Nondisability	$225,093,509	$80,886,491	$305,980,000	$301,000,000	$4,980,000
Temporary disability	17,059,345	5,615,655	22,675,000	21,795,000	880,000
Permanent disability	136,807,083	50,139,917	186,947,000	184,677,000	2,270,000
Fleet Reserve	34,396,656	12,451,344	46,848,000	45,925,000	923,000
Survivors' benefits	1,066,980	483,020	1,550,000	1,603,000	−53,000
Total	414,423,573	149,576,427	564,000,000	555,000,000	9,000,000

Comparison of revised estimates with amount presently available

Category	Presently available, fiscal year 1958			Revised estimates, fiscal year 1958		
	Year end	Average number	Cost	Year end	Average number	Cost
Nondisability	108,648	102,923	$301,000,000	111,005	104,156	$305,980,000
Temporary disability	11,363	11,887	21,795,000	12,595	12,463	22,675,000
Permanent disability	69,021	67,909	184,677,000	69,448	68,020	186,947,000
Fleet reserve	24,392	23,734	45,925,000	25,027	24,006	46,848,000
Survivors' benefits	1,460	1,295	1,603,000	1,472	1,293	1,550,000
Total	214,884	207,748	555,000,000	219,547	209,938	564,000,000

Retired Pay, 1959

Program and financing

	Budget as amended	Revised estimate	Difference
Program by activities:			
1. Nondisability	$361,687,000	$370,925,000	+$9,238,000
2. Temporary disability	22,209,000	24,775,000	+2,566,000
3. Permanent disability	200,000,000	203,850,000	+3,850,000
4. Fleet reserve	53,975,000	56,350,000	+2,375,000
5. Survivors' benefits	2,129,000	2,100,000	−29,000
Total obligations	640,000,000	658,000,000	+18,000,000
Financing: Appropriation (new obligational authority)	640,000,000	658,000,000	+18,000,000

Object classification

	Budget as amended	Revised estimate	Difference
12 Pensions, annuities, and insurance claims	$640,000,000	$658,000,000	+$18,000,000

EXPLANATION OF SUPPLEMENTAL ESTIMATE FOR FISCAL YEAR 1959

There was included in the President's budget for fiscal year 1959 an estimate of $600 million for retired and retirement pay, as authorized by law, of military personnel on the retired lists of the Army, Navy, Marine Corps, and Air Force, including the Reserve components thereof; retainer pay for personnel of the inactive Navy and Marine Corps Fleet Reserve; and payments to survivors pursuant to the Uniformed Services Contingency Option Act of 1953. An additional $40 million has also been requested in a budget amendment to provide for the increased pay of retired military personnel and fleet reservists as authorized by Public Law 85–422, approved May 20, 1958. Subsequent to the submission of the original estimates for these purposes, changes have developed which were not consistent with the estimates and were not foreseeable at that time. These changes have required a supplemental request for additional funds for fiscal year 1958 and an additional requirement of $18 million for fiscal year 1959. In summary, these unforeseen circumstances and recent legislation which authorized increases in the pay of retired military personnel will require an additional $58 million over the original estimate, or a total revised requirement of $658 million for the retired pay appropriation.

The estimate for fiscal year 1959 in the budget document was based on year-end strengths for the retired rolls of 214,884 annuitants for June 30, 1958, and 231,035 annuitants for June 30, 1959. Based on the actual and projected accessions to the retired rolls for the balance of this fiscal year, it now appears that the strength projections made last summer on which these estimates were based are considerably under current rates of accessions to the retired rolls. It is now estimated that the year-end strength for June 30, 1958, will be approximately 219,547 annuitants and the year-end strength for June 30, 1959, will be approximately 236,790 annuitants,

or an increase of 5,755 over the earlier projection for June 30, 1959. The earlier projections could not anticipate the further reductions in the Active Force levels which were directed later last fall. While forced separations are adding a substantial number to the retired rolls, more personnel than originally estimated are also electing to retire or transfer to the fleet reserves of the Navy and Marine Corps. Also, there has been an increase in the number of enlisted personnel electing disability retired pay rather than disability compensation from the Veterans' Administration.

In addition, a recent Comptroller General's decision (B–123643, dated March 7, 1958), while having no effect on the number of personnel, is expected to increase substantially the additional amounts required. This decision provides that officers of the uniformed services retired for physical disability who hold a permanent Reserve grade which is higher than the temporary grade in which they were serving on active duty at time of their retirement are entitled to retired pay based on the higher Reserve rank.

There follow schedules showing (1) the actual number of annuitants on the rolls at the end of the past 2 fiscal years and as of March 31, 1958, and the original and revised estimates for June 30, 1958, and June 30, 1959, and (2) the average number of annuitants for the past 2 fiscal years and the original and revised estimates for fiscal years 1958 and 1959.

Number of annuitants on retired rolls

Category	Actual, June 30, 1956	Actual, June 30, 1957	Actual, Mar. 31, 1958	Estimate, June 30, 1958		Estimate, June 30, 1959	
				In budget	Revised estimate	In budget	Revised estimate
Nondisability	87,017	97,352	106,300	108,648	111,005	119,875	122,214
Temporary disability	15,179	12,146	12,411	11,363	12,595	10,836	12,139
Permanent disability	67,463	66,653	67,774	69,021	69,448	71,091	71,830
Fleet reserve	20,803	22,595	24,270	24,392	25,027	27,422	28,775
Survivors' benefits	814	1,128	1,381	1,460	1,472	1,811	1,832
Total	191,276	199,874	212,136	214,884	219,547	231,035	236,790

Average number of annuitants

Category	Fiscal year 1956	Fiscal year 1957	Estimate fiscal year 1958		Estimate fiscal year 1959	
			In budget	Revised estimate	In budget	Revised estimate
Nondisability	83,711	91,819	102,923	104,156	114,566	116,908
Temporary disability	14,939	12,115	11,887	12,463	11,207	12,509
Permanent disability	66,803	65,743	67,909	68,020	70,108	70,694
Fleet reserve	19,633	21,583	23,734	24,006	26,164	27,131
Survivors' benefits	668	949	1,295	1,293	1,635	1,658
Total	185,754	192,209	207,748	209,938	223,680	228,900

Mr. Mahon. The committee will come to order and we will give consideration to some additional appropriation matters.

The committee has received supplemental requests in House Document No. 394 for retired pay, in the amount of $9 million for the fiscal year 1958, and $18 million for the fiscal year 1959.

Will you proceed, Mr. Wylie.

General Statement

Mr. Wylie. I have a statement that I would like to read for the record.

Mr. Chairman and members of the committee, the appropriation "Retired pay, Department of Defense" provides for retired pay, as

authorized by law, of military personnel on the retired lists of the Army, Navy, Marine Corps, and Air Force, including payments to survivors pursuant to the Uniformed Services Contingency Option Act of 1953.

For the fiscal year 1958 the Department of Defense requested and the Congress appropriated $555 million for these purposes, and this amount appeared adequate for fiscal year 1958 at the time the fiscal year 1959 budget was prepared. It was estimated that there would be approximately 214,884 annuitants on the retired rolls at June 30, 1958, with an average strength of 207,748 for the year. However, there has been a higher rate of accessions to the retired rolls than had been anticipated when the strength projections were made last summer. Through March 31, 1958, there had been an actual net gain of 12,262 annuitants to the retired rolls compared with our estimate of 11,256 for this 9-month period. This number compares with a total net gain of 8,598 annuitants for last year as a whole.

When it became apparent in March that the number of accessions to the retired rolls this year would exceed our earlier projections, each of the military services was requested to review their requirements and furnish revised estimates. At the same time they were requested to review their estimates for fiscal year 1959 and revise them, as necessary, inasmuch as the unanticipated gains to the retired rolls this year would affect the base for fiscal year 1959 and require additional funds over the $600 million requested in the President's budget.

As a result of this review it is estimated that the year end strength for June 30, 1958, will total approximately 219,547 annuitants—or an increase of 4,663 over the number originally estimated—and 236,790 as of June 30, 1959—or 5,755 over the number estimated in the President's budget. The estimated average number of annuitants on the rolls has also increased in fiscal year 1958 from 207,748 to 209,938 and in fiscal year 1959 from 223,680 to 228,900.

There are several reasons for the substantial increases in the number of annuitants already added to the retired rolls and expected to be added in the coming months with an additional requirement in funds. First, the earlier projections did not adequately reflect the effect of the reductions in the active force levels. Second, a higher proportion of the personnel being separated from the active forces are electing to retire or transfer to the Fleet Reserves of the Navy and Marine Corps. Also, there has been an increase in the number of enlisted personnel electing disability retired pay rather than disability compensation from the Veterans' Administration. In addition, a recent Comptroller General's decision (B–123643, dated March 7, 1958), while having no effect on the number of personnel, is expected to increase substantially the additional amounts required. This decision provides that officers of the uniformed services retired for physical disability who hold a permanent Reserve grade which is higher than the temporary grade in which they were serving on active duty at time of their retirement are entitled to retired pay based on the higher Reserve rank.

These unforeseen changes and the unanticipated increase in the number of annuitants on the retired rolls have made it necessary to request an additional $9 million this year and an additional $18 million for fiscal year 1959. These amounts were requested on June 9, 1958, and are included in House Document No. 394.

Prior to this supplemental submission, the President requested on June 6, 1958, that the retired pay appropriation request for fiscal year 1959 be amended to add $40 million to cover the increased pay authorized by Public Law 85–422, approved May 20, 1958, for all retired personnel and fleet reservists expected to be on the rolls during fiscal year 1959. Senate Document No. 103 includes the additional amounts required as a result of this act.

Since the increases in retired pay pursuant to Public Law 85–422 were effective as of June 1, 1958, an additional $3 million is estimated to be required this month. This amount is not included in this supplemental request for fiscal year 1958 as separate authority is proposed to cover the additional cost this year resulting from pay increases authorized by the act.

Since we understand this will probably be in the form of a joint resolution, we will request that money only if we see by the end of the year we are going to need that additional $3 million.

In summary, the total estimated requirements for fiscal years 1958 and 1959 are now as follows:

	1958	1959
Appropriation or estimate	$555,000,000	$600,000,000
Pay increase pursuant to Public Law 85–422:		
Budget amendment (S. Doc. 103)		40,000,000
Proposed joint resolution	3,000,000	
Supplemental (H. Doc. 394)	9,000,000	18,000,000
Total	567,000,000	658,000,000

These revised estimates represent the best available projections of the number of annuitants on the retired rolls for the fiscal years 1958 and 1959 and the necessary funds to support the estimates.

Payments under this appropriation are required by law and any funds not required, revert to the Treasury at the end of the year.

NEED FOR SUPPLEMENTAL FUNDS

Mr. MAHON. These schedules for pay of retired personnel are fixed by law, are they not, Mr. Wylie?

Mr. WYLIE. Yes; that is correct.

Mr. MAHON. Is there any way by administrative procedure to somewhat reduce appropriations for retired pay?

Mr. WYLIE. I do not know of any administrative procedures whereby we could reduce our estimates for retired pay in view of the fact that all of the payments to retired personnel come under enacted legislation at rates approved by Congress, and I do not know of any way that we could reduce our appropriations.

Mr. MAHON. It is a little disturbing to be confronted with requests for supplemental appropriations.

Mr. WYLIE. Mr. Chairman, we have been very fortunate in the last few years and this is the first time that we have requested a supplemental estimate. The services are doing a much better job of estimating, but unfortunately last year in developing the estimates for 1959 their projections of the accessions to the retired lists did not adequately reflect the effect of the reduction in the active force levels. We initiate calls for estimates about August so that we can have them

early in September. Consequently, the services, when they received their force levels for fiscal year 1959 as approved by the President and the Secretary of Defense, did not give full consideration to the effect of that reduction on the retired pay appropriation. That is one of the things that happened this year, and it does have a very definite effect upon our 1958 and 1959 appropriations.

Mr. MAHON. Are there any questions?

ENTITLEMENT TO RETIRED PAY

Mr. BUDGE. I would like to ask unanimous consent that the Department put into the record at this point a concise statement showing the circumstances under which retired pay may be drawn from this fund.

Mr. MAHON. Will you prepare the statement in accordance with the request submitted by Mr. Budge?

(The requested information follows:)

In order to qualify for retired pay under this appropriation, military personnel must meet one of the following requirements:

I. DISABILITY RETIREMENT

A. Permanent disability retirement

A service member (officer or enlisted) who becomes permanently physically unfit for military service as the result of a service-incurred disability which is rateable at 30 percent or more under the VA rating schedule is entitled to disability retirement pay.

B. Temporary disability retirement

A service member (officer or enlisted) otherwise eligible for permanent disability retirement except that the disability is categorized as "may be permanent" rather than "is permanent" is placed on the temporary disability retired list. Disabilities are categorized as "may be permanent" if the percentage of disability is expected to change by 10 percent or more within 5 years, or if recovery can be expected within that period.

C. Disability retired pay computation

Disability retired pay is computed at the member's option in one of the following ways:

1. 2½ percent times his years of active service times the basic pay of his retired grade; or
2. His percentage of disability as established under the VA rating schedule times the basic pay of his retired grade.

Maximum—75 percent of basic pay of retired grade.

A member's retired grade for disability retirement purposes is usually the grade held at the time of retirement, but may be any higher temporary grade satisfactorily held.

While on the temporary disability retired list a service member is guaranteed 50 percent of the basic pay of his retired grade.

II. LENGTH OF SERVICE RETIREMENTS (NONDISABILITY)

A. Officers

1. *Voluntary retirement.*—Officers with 20 or more years of active Federal service, of which 10 or more years were active commissioned service, may apply for retirement. Whether such applications will be approved is discretionary with the Secretary concerned.

2. *Mandatory retirement.*—Officers are subject to mandatory retirement by operation of law on completion of minimum specified periods of service, which vary dependent on the member's grade and service of assignment. For example, officers above the grade of lieutenant colonel/commander, are not subject to mandatory retirement until they have completed at least 30 years of service. Officers in the grade of lieutenant colonel (Army and Air Force) are mandatorily retired on

completion of 28 years of service. Navy commanders normally are mandatorily retired on completion of 26 years of service.

B. Enlisted personnel

1. *Voluntary retirement.*—Enlisted men (Army and Air Force) with 20 or more years of active service are eligible to be retired based on their application. Similarly, Navy and Marine enlisted men with 20 but less than 30 years active service must on application be transferred to the Fleet Reserve (or Fleet Marine Corps Reserve) until completion of 30 years combined active service and service in the Fleet Reserve, at which time they are retired.

2. *Involuntary retirement.*—There is no legal provision for involuntary retirement of enlisted men.

C. Length of service retired pay computation

Retired pay for length of service is computed by multiplying the basic pay of the member's retired grade by 2½ percent times their years of service. (With a maximum of 75 percent of their basic pay.)

Years of service in the case of an enlisted man are his years of active service; in the case of an officer, his years of service varies dependent on the type of retirement, but generally are the years of service which he has to his credit for purpose of computing his basic pay. Years of non-active-duty service performed after June 1, 1958, are creditable in computing officer retired pay only to the extent they would be creditable under the "Special provision for length of service (nondisability) retirement for Reserve personnel" set forth below.

Retired grade in case of an officer is normally either his permanent grade or such higher temporary grade as he has held satisfactorily (and for at least 6 months in the case of the Army and Air Force). In the case of an enlisted man, his retired grade is the grade held at the time he applied for retirement (or transfer to the Fleet Reserve or Fleet Marine Corps Reserve). In addition, in case of an enlisted man who has served in an officer status, his retired grade after completing a combined total of 30 years active service plus service on the retired list or in the Fleet Reserve or Fleet Marine Corps Reserve is the highest officer grade in which he has served satisfactorily.

III. SPECIAL PROVISION FOR LENGTH OF SERVICE (NONDISABILITY) RETIREMENT, FOR RESERVE PERSONNEL, BASED ON PARTICIPATION IN RESERVE TRAINING PROGRAMS

A. Reserve components

A Reserve member, who on attaining age 60 has completed 20 or more years of satisfactory Federal service is entitled to retired pay.

Any year of membership in a Reserve component prior to July 1, 1949, is a year of satisfactory Federal service.

Subsequent to July 1, 1949, a year of satisfactory Federal service is any year in which a minimum of 50 points are earned or credited; 15 points are automatically credited for each year of membership in a Reserve component; additional points are earned by active duty, drills, attendance at periods of instruction, etc.

B. Retired pay computation for Reserve members

Retired pay under this special provision is computed as follows: The total points earned or credited are divided by 360. That quotient is then multiplied by 2½ percent times the basic pay of the highest grade, permanent or temporary, satisfactorily held at any time.

PROMOTION TO HIGHER GRADE PRIOR TO RETIREMENT

Mr. BUDGE. There is one other question that I would like to ask. How widespread is the practice of promoting, particularly officers, just prior to their retirement? In other words, so they retire at a grade above that in which they have been serving?

Mr. WYLIE. Mr. Chairman, I have Mr. Spence here from the Department of the Air Force, who can answer that question.

Mr. SPENCE. I can assure you, sir, that the instances where an individual is promoted to a higher grade very shortly before retirement are very rare indeed. As a practical matter in the Army and

the Air Force an individual must serve for a minimum of 6 months in a temporary grade before he can be retired with pay based upon that grade.

Mr. BUDGE. Six months is not very long.

Mr. SPENCE. That is the minimum, sir. And in the usual cases men normally serve for at least 3 to 5 years in a grade before they can be retired in a particular grade.

Mr. BUDGE. I know, Mr. Chairman, this is not the time to go into this, but frankly I am very disturbed at the retirement, particularly of officers who are still young men and in many instances have been educated at the expense of the Government. I think at some point the committee ought to take a pretty close look at this operation.

Mr. MAHON. Are there any further questions?

RELIABILITY OF ESTIMATES

Mr. FLOOD. I am not concerned so much at this point about the law. We are responsible for the law and not you. But you are responsible—and that is a rhetorical you—the Department is responsible for what kind of yardstick you think up; what kind of procedures you give birth to for the purpose of evaluating and administering the law. In this case, estimates.

Now, I had the impression here that you bring this up very casually. There is a discrepancy here of nearly $60 million. There is quite a mistake, even for the Department of Defense. I am concerned with the fact that whoever sets up the procedures and methods for evaluating and estimating the administration of these laws was wrong by $60 million. Now, you gave a not very effective suggestion to the chairman that one reason is the question of force levels.

Mr. WYLIE. That is right, sir.

Mr. FLOOD. I know all about force levels. I also get the impression that the Department of Defense has decided even now that Mr. Sikes' amendment to raise the Army 30,000 is just one of those aberrations that you must put up with on the Hill when the weather gets hot and that you and no one else at Defense has any idea of paying any attention to it.

Now, on page 4 of your statement, even now, even at this last minute, you say:

"These revised estimates represent the best available projections."

You may even miss this by $60 million more before you get through. Why do you do this so badly?

Mr. WYLIE. Well, Mr. Flood, of the $60 million, $40 million is for the pay increase which was just recently enacted, which is effective June 1 of this year.

Mr. FLOOD. That is a statutory problem.

Mr. WYLIE. We could not include that in the estimate.

Mr. FLOOD. Why would you miss the difference, and, secondly, what is your margin for additional error? I take it for granted that this estimate is not figured right down to the penny even on those that you anticipate. There must be some cushion. There must be some margin for error. You are notorious for your cushions and your margins. What is your margin here, and in view of the fact this is only the best available projection, how badly is that going to be wrong?

Mr. WYLIE. Mr. Flood, I might answer that question in this manner, sir; the $18 million represents about a 3 percent deficiency in our estimate.

Mr. FLOOD. And that does not impress you at all?

Mr. WYLIE. Yes, it does. I would like to have it much better than that, and we are striving to do that, but here is the problem that we are faced with in retired pay. Take, for example, officers who have attained 20 years of service. They are eligible to retire at any time after 20 years of active duty, after they have attained 20 years of service.

Mr. FLOOD. That is the fact and the law. Do you not know that?

Mr. WYLIE. Yes, I do know that.

Mr. FLOOD. So——

Mr. WYLIE. The military departments know generally how many officers they have eligible for retirement, but they cannot forecast exactly how many of those officers are going to elect to retire.

Mr. FLOOD. I am not suggesting that you use a crystal ball. I do not think you are Houdini, and I do not want you to be mindreaders, but do you send out a circular? Do you send out a form? Does anybody talk to them? Do you make any effort to contact that group of officers who are potentially retirees—and that is a bureaucratic word?

Mr. WYLIE. Sir, I am quite sure that the services do not do that.

Mr. FLOOD. Why not?

Mr. WYLIE. Well, that would be a terrific job, considering the number of officers we have in the Military Establishment.

Mr. FLOOD. That are eligible for retirement under the factors that you just stated?

Mr. WYLIE. Yes. That would mean corresponding with these officers all over the world.

Mr. FLOOD. Would not that be more simple than coming up here for millions and millions and millions of dollars in supplementals?

Mr. WYLIE. Well——

Mr. FLOOD. Would you rather have the supplemental pay the difference and not be bothered about it at all? This, I suppose—the supplemental—is the path of least resistance. What is $18 million?

Mr. WYLIE. No; I do not consider it the path of least resistance, Mr. Flood.

Mr. FLOOD. How could you have reduced it 50 percent? What could you have done under your present system which would have reduced this supplemental in half? What reasonably could you have done, and what is the reason you did not do it?

Mr. WYLIE. That is something that we are going to have to explore further with the military departments.

Mr. FLOOD. Should that not have been done by this time? You have been in business for a hundred years.

Mr. WYLIE. When we make our call to the military departments to submit their estimates, we meet with their staffs. We review the estimates after they have been submitted and I think we do practically everything we can think of to get these estimates as close as possible and as realistic as possible.

Mr. FLOOD. You are not thinking very well.

Mr. MAHON. Mr. Sikes.

BASIS FOR ESTIMATED NUMBER OF RETIREES

Mr. SIKES. Do you project your estimates of the number of retirees on a curve that is made up from past experience, or how do you estimate the number that you submit to the Congress each year?

Mr. WYLIE. The estimates are based on different categories. We have four categories of retirement.

We have the nondisability retirements and those consist of personnel who have 20 or more years of service. They have the election of retiring after completion of 20 years of service, or after they reach 30, they have mandatory retirement.

Then we have temporary disability retirement, and the disability retirement roll is where we use an experience factor.

Mr. SIKES. Well now, the experience factor is what I want to get at.

If you use an experience factor, will that not give you a pretty accurate curve on which to base your future anticipated retirements?

Mr. WYLIE. Yes.

Mr. SIKES. Do you do that?

Mr. WYLIE. We do that.

Mr. SIKES. But the anticipated number has fallen below the actual number?

Mr. WYLIE. It is not so much in the disability category as it has been in the nondisability category. That is where we have most of our deficiency.

Mr. SIKES. More people are dropping out than you expected?

Mr. WYLIE. Yes.

Mr. SIKES. Is that because of the availability of good jobs?

Mr. WYLIE. That is a part of it, sir. Also, with a reduction of our force levels some that would normally stay are being forced to retire.

Mr. SIKES. Do you take all those things into consideration when you project a curve?

Mr. WYLIE. That is right, sir.

Mr. SIKES. You do that?

Mr. WYLIE. Yes.

Mr. SIKES. About all that you can have is an educated guess, but you have been guessing consistently low. Would that not in itself be a reason to increase your estimate?

Mr. WYLIE. This has been somewhat of an exceptional year. We missed this year. The last year we did not. We came within our estimates very well.

Mr. SIKES. Did you use the same factors?

Mr. WYLIE. No, sir. We adjust our factors based on our current experience. For example, disability retirements are based upon the number of troop movements we have, the number of exercises we have, and those are projected through the years.

Mr. SIKES. The factors that you have used have been reasonably accurate for the last 2 years, and this year they were off?

Mr. WYLIE. Yes.

Mr. SIKES. Do you know why they were off?

Mr. WYLIE. Primarily in the nondisability rolls where the force levels have forced personnel out of the service, and there also have been more personnel retiring who have attained 20 years of service and have elected to go into private industry.

Mr. SIKES. You knew that you were going to have some forced reductions. You could have taken that into account.

Mr. WYLIE. Yes. I explained in my statement that full consideration was not given at the time that we prepared these estimates last summer to the effect of that reduction.

Mr. WIGGLESWORTH. Am I correct in understanding that the $3 million item is not before the committee at this time?

Mr. WYLIE. No, sir; it is not.

Mr. MAHON. Are there any further questions? If not, we thank you, Mr. Wylie.

Mr. WYLIE. I would like to assure this committee I will certainly do everything that I possibly can to improve the estimates of the military departments.

Mr. MAHON. Thank you very much.

WEDNESDAY, JUNE 18, 1958.

DEPARTMENT OF THE ARMY

MILITARY PERSONNEL, 1956

WITNESSES

BRIG. GEN. ALBERT WATSON II, DIRECTOR OF PROGRAMS, OFFICE DEPUTY CHIEF OF STAFF FOR PERSONNEL

MAJ. GEN. CHARLES R. HUTCHISON, ASSISTANT DIRECTOR OF ARMY BUDGET, OFFICE, DIRECTOR OF ARMY BUDGET, COMPTROLLER OF THE ARMY

Fiscal year 1956 deficiency $8,000,000

NARRATIVE JUSTIFICATION

Funds in the amount of $3,679,095,000 were appropriated in this account. Cumulative obligations as of February 28, 1958, were $3,686,394,986, which exceeded the amount appropriated for pay and allowances of military personnel by $7.3 million or two-tenths of 1 percent. The strength of the Army was within that approved.

It is estimated that approximately $0.7 million will be required to cover unforeseen obligation adjustments prior to the time the account expires and to pay valid claims of military personnel which may be filed, thus making a total estimated deficit in this account of $8 million.

These additional funds are required to cover a deficiency resulting from an underestimate of the cost of the military pay increase granted in 1955. The deficiency did not become apparent until after the close of fiscal year 1956 when the actual obligations became known.

Mr. MAHON. The next item under consideration is a request for an even $8 million to cover a deficiency in Army military personnel appropriations for the fiscal year 1956.

We are now in the fiscal year 1958 and will soon enter the fiscal year 1959, but this is for a deficiency for the fiscal year 1956.

The letter from the Director of the Bureau of the Budget printed as a part of House Document No. 394, page 16, says:

> These additional funds are required to cover a deficiency resulting from an underestimate of the cost of the military pay increase granted in 1955. The deficiency did not become apparent until after the close of the fiscal year 1956 when the actual obligations became known.

The fiscal year 1956 ended approximately 2 years ago. When did this actual obligation become known, General?

Geneneral Watson. The deficiency became known in February 1957.

Mr. Mahon. Why are we so late doing something about it?

General Watson. At that time, sir, it appeared that the adjustments—and I have this covered in my statement—in the appropriation, because of other factors—the pluses and minuses—would overcome the deficit. The next report we got indicated we were in a better financial position than the February report indicated.

Mr. Mahon. Does the Army know the actual deficiency at the present time?

General Watson. We have the figure. It is about $7.6 million. That is a deviation of two-tenths of 1 percent.

Mr. Mahon. When will this appropriation expire for expenditure purposes?

General Watson. June 30, 1958.

Mr. Mahon. We probably cannot get a bill through the House by that time. So if we put the money in it would not be available unless we write in some special language.

General Hutchison. Any further claims will be paid from the so-called M account. We have to have a plus balance in the fiscal year concerned, as I understand it.

Mr. Mahon. What does that mean in words of one syllable?

General Hutchinson. After the appropriation expires for expenditure purposes it then goes to an account against which claims can be paid.

For example, if some officer did not receive his pay from this appropriation in the fiscal year 1956 he could submit a claim and it could be paid out of the unexpended balances from the so-called M account.

Mr. Mahon. Could this money be appropriated in July and would it still be available to pay these claims?

General Watson. I believe it would have to be specifically labeled for the deficit of $8 million, sir.

Mr. Sikes. Does that mean that these men have not been paid, that they are still owed some money—not as individuals, surely?

General Watson. No, sir. What it boils down to, sir, is we have paid out the funds and as of the last accounting we were $7.6 million short. Then we projected our estimate of shortage over the last 2 months of this year and added that to the $7.6 million and the total came out to the $8 million requested.

Mr. Sikes. You have been borrowing from Peter to pay Paul and now you want to get your books in order; is that right?

General Watson. That is right.

Mr. Mahon. Write us a letter, and also insert a statement into the record at this point in which you discuss and make clear the the problems which we have just been discussing here, as to whether or not this money would be available.

(The statement and letter referred to are as follows:)

The act of July 25, 1956 (31 U. S. C. 701), states that annual appropriation accounts shall be closed at the end of the second full fiscal year following the year of obligation availability. This is to be done by transferring the obligated balance to a consolidated account made up of balances of all appropriations under the same heading (known administratively as the M account). It is the practice of the

Treasury Department to refuse to transfer the balance of an account which is in a deficit condition, since the account would then lose its identity and the deficiency would be covered by available balances in the M account. Therefore, if the deficiency appropriation is not made until after June 30, the account would be continued with its separate identity and its transfer delayed until the funds were appropriated. The law itself is silent as to what is to be done in cases where the appropriation concerned is in a deficiency at the end of the second year following the availability for obligation.

JUNE 23, 1958.

Hon. GEORGE H. MAHON,
Chairman, Subcommittee on Department of Defense Appropriations,
House of Representatives.

DEAR MR. MAHON: This is to provide the additional information requested by your subcommittee on June 19 in the course of the hearing on the supplemental appropriation request for fiscal year 1956 for "Military personnel, Army."

Question was raised as to the legal effects which would result if the requested deficiency amount should not be appropriated by the end of the fiscal year 1958. The act of July 25, 1956 (31 U. S. C. 701), requires that the account of each annual appropriation be closed at the end of the second fiscal year following the year of availability for obligation. The closing is to be accomplished by transferring the obligated balance to a merged account made up of amounts transferred from all appropriation accounts for the same purposes. The law defines "obligated balance" as being the amount of unliquidated obligations less the amount collectible as repayments to the appropriation. However, neither the law nor the legislative history indicate that any different procedure is to be followed when the "obligated balance" is a minus amount and the appropriation is in a deficiency status. It appears that there is nothing in the law to prohibit the merging of an appropriation account in deficiency condition into the general merged account, or M account. Thus, if the Congress should decline to appropriate the requested deficiency amount, and the account were merged into the M account, the available balances in that account would cover the deficiency. However, it is understood that in order to insure full disclosure to the Congress, Treasury procedures do not permit such merging of deficient appropriations. Additionally, Bureau of the Budget regulations require the submission of a deficiency appropriation request in such cases. In the present instance, full disclosure has been made to the Congress by the submission of a deficiency appropriation request. In specific answer to your question, if the requested deficiency amount were appropriated after June 30, there would be no effect, since the administrative action of transferring the account would be delayed until the enactment of the appropriation. However, if the Congress declined to make the appropriation, with appropriate explanation in a report that it considered the appropriation unnecessary because of the merger into the M account, the Department of the Army is aware of nothing in existing law to prohibit such merger and the absorption of the deficiency in the M account.

The second question pertained to the use of unobligated balances of 1956 and 1957 appropriations to cover the deficiency in MPA, 1956. At the time of the hearing, no definite decision had been made as to the use of these balances to cover the cost of recent military and civilian pay increases, and the Department of the Army believed there was a possibility that they might be required for that purpose. It is now understood that utilization of those unobligated balances to cover pay increase costs is not contemplated. The following unobligated balances exist as of April 30, 1958:

	Fiscal year 1956	Fiscal year 1957
Operation and maintenance, Army	4,810,604	14,612,331
Reserve personnel, Army	4,211,469	46,537
Army National Guard	811,252	1,994,721

It is noted that these balances are no longer available for obligation, so that their reappropriation would have the same effect as an appropriation from the general fund of the Treasury, as proposed in House Document 394.

Sincerely,

DAVID W. TRAUB,
Major General, GS, Director of Army Budget, OCA.

27544—58——5

Mr. MAHON. This money probably would not be available to you actually until maybe late July or early August, so we need to have that clear.

DELAY IN SUBMITTING REQUEST

Why has this request been delayed so long?

General HUTCHISON. I would say the request has been delayed because we felt the adjustments would bring us into a black position rather than red.

Mr. MAHON. Why did you have this erroneous feeling?

General HUTCHISON. The deficit was coming down. At January 31, 1957 it was $12 million and at March 31, $7 million. Since the trend was downward the indications were that a supplemental request would be unnecessary. The deficit represents something like two-tenths of 1 percent of the amount that was appropriated.

Mr. MAHON. In other words, we are dealing here with an appropriation in the area of $3 billion?

General WATSON. $3.7 billion.

Mr. MAHON. And you have miscalculated by a very narrow margin here?

General WATSON. That is right.

Mr. SIKES. I would like to be sure we know that a later appropriation, an appropriation after the 1st of July, would still be effective. Can you let us know?

General WATSON. We will let you know. I do not know the answer at this time. It would appear to me, subject to further confirmation, that if the language of the bill places it in this current fiscal year, 1958, specifically it would cover the problem. However, that is a legal matter which I will have to find out about and provide the answer for the record.

(The information requested is on p. 62).

STATEMENT OF DIRECTOR OF PROGRAMS

Mr. MAHON. Did you have a statement?

General WATSON. Yes, I do.

Mr. MAHON. And you have already covered it?

General WATSON. I think that we have.

Mr. MAHON. We will place the statement in the record at this point.

(The statement referred to follows:)

Mr. Chairman, gentlemen, I appreciate the opportunity to appear again before this committee. My purpose today is to present the Army's request for additional funds to counterbalance a deficiency existing in the military personnel, Army appropriation for fiscal year 1956.

We are requesting $8 million as set forth in the President's communication of June 9, 1958 (H. Doc. 394). This requirement results from an underestimate in the cost of the military pay increase granted in 1955.

Congress appropriated $3,679,095,000 for military personnel, Army, for fiscal year 1956. At the close of the fiscal year, obligations were reported to be $3,645,248,000, or $34 million less than the amount appropriated. It was not until February 1957 that a deficiency was reflected in the accounting records. However, at that time, based on experience in previous years, it appeared probable that adjustments to the appropriation would be sufficient to overcome the deficit. Sufficient adjustments did not materialize and by April 30, 1958, reported obligations amounted to $3,686,739,499. This exceeded the appropriated amount by $7.6 million.

Based upon experience data for the 2 preceding months, the deficiency estimate was increased from $7.6 to $8 million to cover a contingent liability for the period from May 1, 1958, through June 30, 1958. The fiscal year 1956 appropriation account expires for expenditure purposes on June 30, 1958. Up to that time obligation adjustments will be made in this account to cover unforeseen expenditures. These adjustments result from discrepancies uncovered in the audit of military pay accounts and from travel claims submitted by commercial carriers.

The military strength of the Army for fiscal year 1956 was within that authorized for the budget. The deviation under the authorized strength actually served to hold the cost down. The additional cost of $8 million is attributable to greater increases in actual average pay rates than were anticipated from the Career Incentive Act of 1955.

BASIS FOR ADDITIONAL COST

Mr. WIGGLESWORTH. You state in the last paragraph of your statement:

The additional cost of $8 million is attributable to greater increases in actual average pay rates than were anticipated from the Career Incentive Act of 1955.

What is the explanation of that?

General WATSON. Actually, we had no experience factors on which to base the estimates of the fiscal year 1956 budget. Our estimates of the amounts for each of the average pay rates reflected in dollars for the 1956 budget were actually in error. It was a new bill. Our fiscal people did not have experience with the new system and there were errors in estimation of the impact of the Career Incentive Act of 1955.

FUNDING BY TRANSFER FROM UNOBLIGATED BALANCES

Mr. WIGGLESWORTH. Are there not any funds that can be made available by transfer to cover this item without requesting new money?

General WATSON. We looked into that matter, sir, and discussed it thoroughly. I would like to ask General Hutchison to respond on that point.

General HUTCHISON. There are some unobligated balances, but I understand they are going to be recommended to be used to cover the retroactive feature of the civilian pay bill and the 1 month of the military pay bill. That is my understanding and that is why the administration has requested a new appropriation to cover this deficiency.

Mr. WIGGLESWORTH. How much is available at the moment?

General HUTCHISON. The following amounts are available:

	Fiscal year 1956	Fiscal year 1957
Operation and maintenance, Army	$4,810,604	$14,612,331
Reserve personnel, Army	4,211,469	46,537
Army National Guard	811,252	1,994,721
Total	9,833,325	16,653,589

Mr. WIGGLESWORTH. That is something over $16 million. That, you understand, is going to be completely absorbed by the other increases that you just mentioned?

General HUTCHISON. Yes. In the Department of the Army the retroactive feature of the civilian pay bill will be something in the neighborhood of $50 million. I presume that the balance of that is to be covered by the unobligated balance from the 1958 accounts. I am not certain as to what will be sent up here to this committee.

AMOUNT OF REQUEST

Mr. MAHON. I am not completely clear on some of the issues that have been raised here. I am going to ask Mr. Crosby to see to it that the staff makes a good clear study of this, in collaboration with you people in the Department, in order to be able to advise us precisely what the situation may be at the time we sit down to agree on the figures in this bill.

For example, I believe that you said that you want about $7.6 million?

General WATSON. A total of $8 million for this deficiency of 1956 in the military personnel, Army, appropriation.

Mr. MAHON. I got the impression that it was a little less.

General WATSON. Actually, $7.6 million was the exact shortage as of May 1, and we have extended that figure to cover the experience up to that point, to our June 30 deadline date, our end date, and it comes out just short of $8 million. It is rounded at $8 million.

Mr. MAHON. There is no fundamental policy matter involved here; it is a matter of discharging the incurred obligations of the Government.

General WATSON. That is right.

Mr. MAHON. And if the staff is convinced I am willing to accept their judgment with respect to this matter after they have conferred further with you on the issue.

General WATSON. We will be delighted to be of any assistance desired.

FINANCING BY TRANSFER FROM UNOBLIGATED BALANCES

Mr. RILEY. I am wondering if it would not make a better transaction if you did transfer from funds already on hand from other categories to take care of this deficit and then make the appropriation just a little more current. It seems like pretty bad business to go back and have to pick up a 2-year-old account if there are balances already in other accounts. What about that, General?

General HUTCHISON. Well, I am not certain, but I think one of the reasons that the administration did not plan the use of the unobligated balances would be in order to make more prompt payment of the retroactive feature of the civilian pay bill. If we plan on using the balances for the $8 million deficit, we would have to wait for a supplemental appropriation for the pay bill.

Mr. RILEY. If you make a habit of going back and picking up accounts 2 or 3 years old, we do not know where we stand. If you have some unexpended balances in other accounts, it seems to me that it would be a better proposition to transfer some of those and bring the appropriations up to a more current status.

General HUTCHISON. As I understand it, that procedure would have to be accomplished in the same manner as this hearing. Instead

of appropriating the $8 million there would be a directive to utilize unobligated balances to cover this deficit.

Mr. RILEY. It would make our appropriations more current than to go back and pick up an overdraft 2 or 3 years old.

Mr. WIGGLESWORTH. You have that authority anyway to transfer.

General HUTCHISON. No, sir, we do not.

General WATSON. This would involve transfer between appropriations.

Mr. WIGGLESWORTH. I understand. You are correct.

Mr. MAHON. Thank you, gentlemen.

WEDNESDAY, JUNE 18, 1958.

DEPARTMENT OF THE NAVY

MEDICAL CARE, 1958

WITNESSES

HON. J. SINCLAIR ARMSTRONG, ASSISTANT SECRETARY OF THE NAVY (FINANCIAL MANAGEMENT)

REAR ADM. B. W. HOGAN, MEDICAL CORPS, UNITED STATES NAVY, CHIEF, BUREAU OF MEDICINE AND SURGERY

REAR ADM. F. P. GILMORE, MEDICAL CORPS, UNITED STATES NAVY, ASSISTANT CHIEF, FOR PLANNING AND LOGISTICS, BUREAU OF MEDICINE AND SURGERY

REAR ADM. G. F. BEARDSLEY, UNITED STATES NAVY, DEPUTY COMPTROLLER

DEPARTMENT OF THE NAVY MEDICAL CARE

Program and financing

	Presently available	Revised estimate	Difference
Program by activities:			
Direct obligations:			
1. Maintenance and operation of medical treatment facilities	$34,380,000	$34,380,000	----------
2. Education and training	3,556,000	3,556,000	----------
3. Medical services, supplies, and equipment at other facilities	10,857,000	10,857,000	----------
4. Nonrecurring procurement of services, supplies and equipment	2,941,000	2,941,000	----------
5. Medical material support	157,000	157,000	----------
6. Medical care in nonnaval facilities	29,803,000	37,803,000	$8,000,000
7. Care of the dead	933,000	933,000	----------
8. Departmental administration	2,573,000	2,573,000	----------
Total direct obligations	85,200,000	93,200,000	8,000,000
Reimbursable obligations:			
1. Maintenance and operation of medical treatment facilities	21,760,000	21,760,000	----------
2. Education and training	335,000	335,000	----------
3. Medical services, supplies, and equipment at other facilities	289,000	289,000	----------
6. Medical care in nonnaval facilities	251,000	289,000	38,000
Total reimbursable obligations	22,635,000	22,673,000	38,000
Total obligations	107,835,000	115,873,000	8,038,000
Financing: Advances and reimbursements from other accounts	−22,635,000	−22,673,000	−38,000
New obligational authority	85,200,000	93,200,000	8,000,000

Object classification

	Presently available	Revised estimate	Difference
Total number of permanent positions	7,995	7,995	
Full-time equivalent of all other positions	1	1	
Average number of all employees	7,869	7,869	
Number of employees at end of year	7,798	7,798	
Personal service obligations:			
Permanent positions	$32,431,000	$32,431,000	
Positions other than permanent	3,000	3,000	
Other personal services	953,000	953,000	
Total personal service obligations	33,387,000	33,387,000	
Direct obligations:			
01 Personal services	23,887,000	23,887,000	
02 Travel	544,000	544,000	
03 Transportation of things	153,000	153,000	
04 Communication services	381,000	381,000	
05 Rents and utility services	1,389,000	1,389,000	
06 Printing and reproduction	257,000	257,000	
07 Other contractual services	32,950,000	40,950,000	$8,000,000
Services performed by other agencies	8,542,000	8,542,000	
Labor contracts with foreign governments	348,000	348,000	
08 Supplies and materials	13,716,000	13,716,000	
09 Equipment	1,793,000	1,793,000	
11 Grants, subsidies, and contributions	1,509,000	1,509,000	
15 Taxes and assessments	12,000	12,000	
Subtotal	85,481,000	93,481,000	8,000,000
Deduct subsistence charges	281,000	281,000	
Total direct obligations	85,200,000	93,200,000	8,000,000
Reimbursable obligations:			
01 Personal services	9,500,000	9,500,000	
02 Travel	21,000	21,000	
04 Communication services	135,000	135,000	
05 Rents and utility services	575,000	575,000	
06 Printing and reproduction	19,000	19,000	
07 Other contractual services	1,320,000	1,358,000	38,000
08 Supplies and materials	10,120,000	10,120,000	
09 Equipment	351,000	351,000	
11 Grants, subsidies, and contributions	591,000	591,000	
15 Taxes and assessments	3,000	3,000	
Total reimbursable obligations	22,635,000	22,673,000	38,000
Total obligations	107,835,000	115,873,000	8,038,000

SCHEDULE ON SUPPLEMENTAL APPROPRIATIONS AND REVISED ESTIMATES

Medical care, Navy

1.	Present appropriation or estimate	$85,200,000
2.	Additional amounts available	+22,635,000
3.	Total amount available	107,835,000
4.	Apportionments:	
	1st quarter	29,512,000
	2d quarter	25,730,000
	3d quarter	25,525,000
	4th quarter	26,068,000
	Budgetary reserves	1,000,000
5.	Total apportionments and reserves	107,835,000
6.	Obligations:	
	1st quarter (actual)	19,662,532
	2d quarter (actual)	29,156,062
	3d quarter (estimated)	29,183,406
	4th quarter (estimated)	37,871,000
7.	Total actual and estimated obligations	115,873,000
8.	Less total amount available	107,835,000
9.	Estimated supplemental required	8,038,000
10.	Estimated supplemental included in latest budget	
11.	Date needed:	
	For obligation, May 1, 1958.	
	For expenditure, June 1, 1958.	
12.	Estimated expenditures from supplemental:	

	In budget	*Revised*
In current fiscal year		5,292,000
In next fiscal year		2,746,000
After next fiscal year		
Total		8,038,000

13.	Actual obligations last 3 months:	
	December 1957	10,779,928
	January 1958	10,810,153
	February 1958	7,873,489

Mr. MAHON. Gentlemen, we have some matters in House Document No. 394 to discuss with you involving medical care and also the problem of a revision of your ship program.

We are pleased to have you before us this morning, Mr. Secretary. Do you care to make a statement at this time?

STATEMENT BY ASSISTANT SECRETARY FOR FINANCIAL MANAGEMENT

Mr. ARMSTRONG. Thank you, Mr. Chairman and members of the committee.

Gentlemen, the Department of the Navy is requesting supplemental funds amounting to $8 million for "Medical care, Navy," in the current fiscal year. No new moneys were involved, as we are asking this sum be transferred from the appropriation "Ships and facilities, Navy."

Rear Admiral Hogan, Chief of the Bureau of Medicine and Surgery, and Rear Admiral Marshall, of the Office of the Deputy Chief of Naval Operations for Logistics, are present to justify this item.

Also, in response to the request of the Committee, witnesses will be available to discuss the matter of the elimination of certain ships from the 1957 and 1958 building programs, as outlined in our letter of June 9, 1958, to the chairman, Mr. Cannon.

Vice Admiral Combs, Deputy Chief of Naval Operations for Fleet Operations, Readiness and Research and Development, and Rear Admiral Mumma, Chief of the Bureau of Ships, will furnish such details as you desire.

Mr. MAHON. Gentlemen, it is a pleasure to have you before the committee. I hope to be with you before your testimony is concluded. I am going to ask Mr. Sikes to conduct the hearing with respect to the problems that you will present to us.

Now, Mr. Sikes, will you proceed?

Mr. SIKES. Thank you, Mr. Chairman.

Mr. Secretary, you have given us your statement.

Who is your next witness?

Mr. ARMSTRONG. Admiral Hogan.

Mr. SIKES. I see that you have a prepared statement, Admiral Hogan. Do you wish to give it at this time?

Admiral HOGAN. Yes, Mr. Chairman.

Mr. SIKES. You may proceed.

STATEMENT BY SURGEON GENERAL OF THE NAVY

Admiral HOGAN. Mr. Chairman and members of the Committee, the medical department of the Navy is requesting supplemental funds in fiscal year 1958 under the appropriation "Medical care, Navy," totaling $8 million, to be derived by transfer from the appropriation for "Ships and facilities," fiscal year 1958. These funds are required to pay the bills for care of eligible dependents by civilian physicians in civilian hospitals, as authorized by Public Law 569 of the 84th Congress, and for care of Navy and Marine Corps personnel and their eligible dependents in nonnaval Federal medical facilities. In addition, reimbursements totaling $38,000 are anticipated, to make a total supplemental requirement of $8,038,000 in fiscal year 1958.

Funds currently available in the fiscal year 1958 appropriation for care of dependents in civilian facilities total $20,214,034, and have been fully expended. Based on the latest data available, there is a daily average of 1,503 dependent patients in civilian facilities at a total annual cost of $27,869,393, leaving a difference of $7,655,359.

The balance of the funds requested amounting to $382,641 are required to meet the cost of an increased patient load of active duty personnel and their dependents in nonnaval Federal medical facilities.

CARE IN NONNAVAL MEDICAL FACILITIES

Mr. SIKES. I note that the communication from the Bureau of the Budget transmitting this estimate states:

> This proposed revision is to provide funds, by transfer, to meet the cost of an increased patient load, and higher rates for medical care for military personnel and their dependents in nonnaval medical facilities.

How much of this is for the medical care of dependents in nonnaval medical facilities?

Admiral HOGAN. All of this request is for nonnaval medical facilities. $7,655,359 is for care of dependents in civilian facilities. We are asking this appropriation of $8 million for the payment of bills, both in Federal and civilian nonnaval medical facilities, Army, Navy, Public Health Service——

Mr. SIKES. Is all of the $8 million to go to nonnaval medical facilities?

Admiral HOGAN. Yes.

Mr. SIKES. But part of it is Federal and part is civilian?

Admiral HOGAN. Yes.

Mr. SIKES. Give me the breakdown between the two.

Admiral HOGAN. In civilian hospitals, $7,655,359. The balance, $382,641, is in nonnaval Federal medical facilities.

Mr. SIKES. I understand.

From the justifications submitted it is indicated that the additional $8 million required results entirely from increased obligations in the last quarter, fiscal year 1958. Is that true?

Admiral HOGAN. Yes.

REASON FOR INCREASED OBLIGATIONS IN LAST QUARTER OF YEAR

Mr. SIKES. Why was this large increase experienced in the last quarter of the year?

Admiral HOGAN. First, there has been some increase, Mr. Chairman, in civilian costs from the first months of the program until the present time. Costs have gone up right along the line in the various services rendered our dependents in civilian institutions. There has also been an increase in the operation costs of our military hospitals.

Mr. SIKES. I do not understand why all of that increase took place in the last quarter. You are asking for $8 million additional as the result of increased obligations in the last quarter of the fiscal year. I do not understand why you would have this large increase in one 3 months' period.

Admiral HOGAN. May I ask Admiral Gilmore to explain this further?

Admiral GILMORE. The main reason it appears in the last quarter is because of a considerable lag in the billing procedure.

Mr. SIKES. Actually, the obligations were not incurred then. It is the time that the bills were received?

Admiral GILMORE. That is correct, sir.

Mr. SIKES. Then, am I to assume this $8 million obligation actually took place throughout the greater part of the year but the bills accumulated toward the end of the year?

Admiral GILMORE. That is fully correct.

COMPLAINTS RE BILLING PROCEDURES

Mr. SIKES. I am getting some complaints from doctors about delays in getting their bills paid, and about complicated billing procedures. Are you running into that problem also?

Admiral HOGAN. The billing procedures for doctors are handled on the local level, Mr. Chairman, by the Blue Shield, or the Mutual of Omaha, whoever is the contracting agent. They have the authority to pay these bills when submitted directly by the physician and then they in turn sum up all those bills and send them in to Washington, where the Army pays them in total. Where the difficulty lies I do not

know unless it is the doctor in some cases submitting the bill incorrectly and having it returned to him.

Mr. SIKES. I presume that there is still some difficulty on the part of the doctors in becoming familiar with billing procedures.

Admiral HOGAN. Yes.

Mr. SIKES. Some of them may be a little slow in sending out their bills. Is it safe to assume that the $8 million of obligations actually accumulated throughout the entire fiscal year?

Admiral HOGAN. Yes. There is at least a 60 days' or more delay in the submission of bills. In some cases it goes many days over that.

Admiral BEARDSLEY. I might add one thing. Based upon a study that we made in the Navy Comptroller shop, as I recall trying to match expenditures with the incurring of the medical treatment—it appeared to us that on the average there was a 6 to 8 months' delay from the time the patient sees the doctor until you really get the first big impact of expenditures. On the average there is a considerable delay. I do not mean all the bills take that long, but our expenditures are lagging about 6 to 8 months during the buildup period.

This program started a year ago in December and it is still going through the buildup and it is sort of leveling off. We hit our patient load probably 9 months ago, but the expenditures are just hitting us, you might say, at this time. So this has really been building up during the whole period since the inception of the program.

Mr. SIKES. What about the bills for obligations incurred in the fiscal year 1958 which do not reach you until after the beginning of the fiscal year 1959? What funds will they be paid from?

Admiral GILMORE. If the bill has been paid by a contracting agency prior to July 1 it is then considered an obligation and will be paid out of this fiscal year's funds.

Mr. SIKES. Out of fiscal year 1958 funds, the same year in which it was incurred?

Admiral GILMORE. That is right.

OBLIGATIONS

Mr. SIKES. What are your total obligations to the latest available date and what is the average monthly rate, if you have that?

Admiral GILMORE. On April 30 our obligations incurred in the current fiscal year in our entire program were $89,614,000.

Mr. SIKES. Do you have that monthly? If not, you can supply it for the record.

Admiral GILMORE. We can supply that for the record readily, sir.

(Requested information follows:)

Appropriation "Medical care, Navy," fiscal year 1958 obligations, by month

July 1957	$5, 102, 464
August	7, 105, 114
September	7, 454, 954
October	9, 579, 945
November	8, 796, 189
December	10, 779, 928
January 1958	10, 810, 153
February	7, 873, 489
March	9, 512, 162
April	12, 599, 955
Total	89, 614, 353
Average monthly obligations	8, 961, 435

Mr. SIKES. Are you sure that figure of $89,614,000 is correct? That seems very high.

Admiral HOGAN. That is the total appropriation.

Mr. SIKES. What is the Navy's part of it?

Admiral GILMORE. I am sorry. That is our total medical-care, Navy, appropriation, not the dependent medical-care program.

Mr. SIKES. Do you have the medical-care part of that?

Admiral GILMORE. The total amount billed up to June 17 in the Navy's portion of the dependent medical-care program was $23,860,000.

(The following was furnished for the record:)

Fiscal year 1958 obligations for dependents' medical care billed by the executive agency

	Obligations
July 1957	$245, 823. 64
August	1, 304, 300. 66
September	841, 709. 73
October	2, 340, 734. 89
November	1, 842, 492. 49
December	2, 082, 064. 36
January 1958	3, 424, 495. 55
February	1, 254, 588. 75
March	1, 985, 944. 16
April	4, 185, 022. 90
May	1, 157, 627. 22
June	----------
Total	[1] 20, 664, 804. 35

[1] Includes $20,185,016 programed for this purpose, plus $479,788 advanced from funds originally programed (and still required) for care of dependents in other Federal facilities.

Of the $23,860,000, unpaid bills totaling $3,195,000 are now on hand.

Admiral GILMORE. These obligations from month to month against our appropriated funds vary widely because of irregularity and absence of positive control of the time of receipt of the bills from civilian authorities.

Mr. SIKES. Is this what might be called an uncontrolled appropriation? Is it something beyond your control?

Admiral HOGAN. Yes.

Mr. SIKES. Will you explain your answer?

Admiral HOGAN. Well, the services are contracted for by the eligible dependent of active-duty personnel with a civilian doctor and hospital and the costs for this service are rendered via the contracting agency to the Army. They, in turn, render it to us, and we have no control except to pay the bill that is presented to us.

Mr. WIGGLESWORTH. Why do you put them in civilian hospitals?

Mr. SIKES. You recognize the Congress is going to experience considerable difficulty; in fact, it is going to be almost impossible—this is the 17th of June—to provide you with this money before the end of the current fiscal year. What will be your situation if it is not available until after the beginning of the next fiscal year?

Admiral GILMORE. It would then serve to increase the expenditures during the fiscal year 1959 in order to pay these bills. Incidentally, sir, of the $23,860,000 in bills received so far, we have been unable to pay $3,195,000 because of a lack of funds.

DELAY IN SUBMISSION OF REQUEST

Mr. SIKES. This deficiency has just been called to our attention. I do not want to dodge responsibility, but I do not think the Congress can be held responsible for failing to provide this money by the end of the current fiscal year. The request simply did not reach us in time. Why did it not come to our attention earlier?

Admiral GILMORE. We submitted it, sir, on the first of April.

Mr. SIKES. To whom?

Admiral GILMORE. To higher authority in the Navy Department and to the Department of Defense and the Bureau of the Budget. I presume, sir, the delay was because of the press and rush of other important business.

Admiral BEARDSLEY. I think the Bureau of the Budget makes it a practice to pull together a number of supplementals and does not send one up every couple of days. So I imagine this was held by the Bureau of the Budget until they got a big enough package to send it up at one time.

APPROPRIATION FOR FISCAL YEAR 1959

Mr. NORRELL. I notice in your statement here you say:

> These funds are required to pay the bills for care of eligible dependents by civilian physicians in civilian hospitals, as authorized by Public Law 569 of the 84th Congress.

How much did we appropriate on the House side for this item for the next fiscal year?

Admiral HOGAN. For the next fiscal year the House put on an obligational limit of $60 million for the Department of Defense.

Mr. NORRELL. I think that we cut that item somewhat.

Now you are asking for a supplemental for the present fiscal year. I am wondering whether you have received all bills throughout the country for the present fiscal year.

Admiral HOGAN. No, sir, we have not.

Mr. NORRELL. You have not. How much will we have to allow under Public Law 569, all told, this year? Just give the best estimate that you can.

Admiral HOGAN. $27,869,000 for Navy.

Mr. NORRELL. That would include the money that you have this year. It would also include the supplemental, and then I want you to include the estimated amount that you have not as yet received for this year, and add the three together and give me the total amount.

Can you do that?

Admiral HOGAN. The $8 million we are asking for is the supplemental transfer authority to pay these unpaid bills.

Mr. NORRELL. You think that will do it all?

Admiral HOGAN. Our best estimate, yes, sir.

Mr. NORELL. You think so?

Admiral HOGAN. Yes, sir. As I stated, this is an uncontrollable program, however, this represents our best estimate with the data now available to us.

Mr. NORRELL. That is all.

Mr. SIKES. Further questions?

RELIABILITY OF ESTIMATES

Mr. Flood. You are not asking for fresh money. You have no authority to do this without coming to us. You are asking for transfer of funds between appropriations which you must come here to get, is that right?

Admiral Hogan. That is right.

Mr. Flood. This is what upsets me: Your appropriation was $20.2 million. You are asking for in round figures $8 million. You missed this by one-third. That is a pretty good miss. If a gunnery officer ever did that you would yank his shoulder boards. What in the world happened? What do these figures mean? Did you miss this badly? If so, how badly did you miss it? What was the matter with the fire control here?

Admiral Hogan. The experience level of this program was not adequate to give us background data on which to base an estimate of the use of civilian facilities and physicians.

Mr. Flood. Skipper, you told us that last year. You mean it is still not adequate? That speech is already on the record here some place in other hearings.

Admiral Hogan. This program began in December 1956. This budget was presented to Congress in January 1957. We had almost no experience at that time, sir.

Admiral Beardsley. These figures were firmed up back about November or December a year ago for the 1958 budget. As was pointed out at that time we did not have much experience. In the early days there was even a greater delay in the buildup, so at that time we did not know when we were coming up with the 1958 budget exactly how much it was going to cost.

Mr. Scrivner. May I ask a question?

Mr. Flood. Yes.

RELIABILITY OF ARMY AND AIR FORCE ESTIMATES

Mr. Scrivner. How come the Army and Air Force are not in for supplemental funds as you are?

Admiral Beardsley. I think the Army and Air Force have a single M. and O. appropriation with a great deal more flexibility. I think they have transfer authority and higher costs, too.

Mr. Scrivner. That does not tie in with what the admiral just said about the lack of experience and couldn't tell how much you were going to need.

Admiral Beardsley. I think it does.

Mr. Scrivner. I do not. If the other two services can do it I do not know why the Navy cannot. You do everything else the other services do.

Admiral Beardsley. This is less than a hundred million dollars, a small appropriation. The Army and Air Force have a single appropriation.

Mr. Scrivner. They had to estimate the cost of medical care to get their figure on M. and O.

Admiral Beardsley. Yes sir.

Mr. Scrivner. They told us approximately what they would need I am quite sure the Navy must have told the same thing last year.

Admiral BEARDSLEY. We did, sir.

Mr. SCRIVNER. Apparently somewhere or other you missed the boat and the other services not concerned with boats did not.

Admiral BEARDSLEY. I don't agree with that.

Mr. SIKES. Had you finished, Mr. Flood?

Mr. FLOOD. We will keep it all together. Go ahead.

Admiral HOGAN. The same yardstick was used by all three services in estimating their need. All three services did not estimate sufficient money for payment of this program. We have to come to the Congress to get permission to transfer $8 million from "Ships and Facilities" to this program in order to expend it. I don't believe the transfer mechanisms of the Air Force and Army require the same authority.

Mr. SCRIVNER. They have to estimate what it is going to cost. They can come in and tell us what it is going to be.

Mr. FLOOD. Some of my best friends are undertakers, if you know what I mean, and there is an old saying if an undertaker makes a mistake he buries it. Using the rule of reason, and even though it is a new operation and you did not have any experience with it before, and all of those self-satisfying and self-serving declarations you will make, the fact remains that this is a bad miss, right or wrong. We must depend upon some kind of yardstick that you have. We do not give you the rules. We do not give you the yardsticks. You long-haired fellows in the finance areas think those up, but regardless of how clear your conscience is on your lack of experience, and your attempts to estimate and project this, you gave us a bad steer on this one. There is no doubt about that. If you had missed the whole Navy budget by this much, you would have been short three and a half billion.

COST PER PATIENT PER DAY

Mr. THOMAS. It might help the record if we can put in a unit cost for the Army, Air Force, and the Navy in this program, and I will stick my neck out and say this one will be the cheapest of the three.

What is the figure, Admiral?

Admiral HOGAN. The fiscal year 1957 cost in naval hospitals for hospitalization of people was $16.24 per day. The Army's rate is around $26 and the Air Force around $24 per day per patient.

Mr. THOMAS. Of course we rehearsed this before I asked the question. I expect that answer is it.

Mr. FLOOD. That is known as a leading question. You have been identified with that before.

VARIANCES IN ORIGINAL ESTIMATES OF ALL SERVICES

Admiral HOGAN. I would like to get for the record the amount of money the Air Force and Army had to have transferred to their medical care account to pay their bills this year, the same as we were obligated to do.

(The following was furnished for the record:)

The original estimates were as follows:

Service	Amount	Reference to page in fiscal year 1958 hearings
Army	$19,155,000	Army hearings, p. 844.
Navy	[1] 20,903,504	Navy hearings, p. 888.
Air Force	[2] 20,683,000	Air Force hearings, p. 759.
Total	60,741,504	

[1] The Navy figure as shown on p. 888 of the hearings is derived as follows:

Total requirement	$23,998,750
Deduct patient contributions	1,999,699
Total	21,999,051
Add overhead	899,953
Total	22,899,004
Deduct committee reduction	1,995,500
Total	20,903,504

[2] The Air Force figure is derived as follows:

Total requirement	$21,648,200
Deduct care of military personnel in above figure	965,000
Total	20,683,200

The current fiscal year 1958 apportionment to the appropriation "Operation and maintenance, Army," includes $90,500,000 for care of dependents in civilian facilities under Public Law 569, 84th Congress. This figure is further broken down by service as follows:

Service	Amount	Variance from original estimate
Army	$24,344,500	$5,189,500
Navy	28,779,000	7,875,496
Air Force	35,566,500	14,883,500
Public Health Service	1,810,000	(1)
Total	90,500,000	----------

[1] Not available.

REVISION OF YARDSTICKS USED IN COMPUTING ESTIMATES

Mr. Flood. My friend is usually much more responsive and to the point than he was that time. That is very interesting information. I know he wanted to get it in the record. I was sure he was going to get it in after I finished but it has nothing to do with what I was talking about at all, and I am not going to be taken off my course by these electronic maneuvers here.

I am concerned about the failure to project an estimate within reason. I think you have made an unreasonable miss.

My problem is this: This is not personal, but entirely rhetorical. We have just had the Defense budget people in here. They used a yardstick on estimating pay under the new pay scales and they were wrong by millions and millions and millions of dollars. They come up here for a supplemental to bury that mistake. The path of least resistance is to say, "Well, we missed it. Let's come up for a supplemental." They did that with the Defense budget 10 minutes ago.

You fellows say, "Well, by golly, we missed it $8 million. Let's come up for a supplemental."

Every time we ask anybody downtown about this they have a pained expression, and they are very hurt because you have been following the method set up for years, that every year proves wrong, and you are still following it.

Can you give us some kind of assurance now, or on the record, when you get around to it, that you have changed or revised your yardsticks or your mechanics on this one thing, let's say? Do you have anything to indicate you might improve it?

Admiral HOGAN. Mr. Flood, what we estimate for the coming year is based on our experience for the past year, the past 12 months. We used the Hill-Burton ratio of 4.4 per thousand people to be in the hospital each day. That, with the number of dependents for whom we are responsible, runs around 3,200 people in a hospital per day.

Now, we subtract what we know we have in our naval hospital system every day, and it gives us approximately 1,500 people that will be in civilian hospitals on the average every day throughout the year. That is what we base it on.

Then we multiply that patient load by $50 a day, by 365 days a year, and that is the total we request.

Mr. FLOOD. Well, it is wrong. So now what are we going to do about that? That system does not work. That did not work by one-third. Are we going to do that again next year and hope and pray we are not that far off?

What is the matter with the system, skipper?

Admiral HOGAN. Well, we have no control of how many people are going to a civilian hospital at the present time.

Mr. FLOOD. Why not? This committee has indicated it is unhappy with that operation, and we have talked about it quite a good deal this year. We were under the impression that now we know the Defense Department decided, in an increasing practice, of ignoring mere language in reports sent down by this subcommittee. I am convinced that language in a report sent out by the Defense Appropriations Subcommittee could not mean less in the Pentagon.

One case is you deliberately reversed this subcommittee on this problem last year. Now, we talked about that under the basic bill, so we won't go into that now. We are not going to get anyplace with that. We lost that argument, as usual.

Now, what I am trying to determine is, since you know the attitude, and since, I suppose, there will be some kind of language reported again this year, in view of that, is there any intention—I don't want to change your medical program, but I am interested only in the mechanics of the supplemental. Can we eliminate or reduce this? Can you guess how much we are going to be off next year?

What is your margin? Do you not have even a cushion, or margin of error?

A budget officer, especially in the Department of Defense, always gives himself a nice soft cushion to miss by a certain margin for error. I am sure you include that, and you even went beyond that. You even bounced off the cushion.

What is your margin this time? Do you have any at all?

Admiral GILMORE. May I make an addendum to the reply?

Mr. FLOOD. Yes.

BASIS FOR ORIGINAL ESTIMATE

Admiral GILMORE. First, there is no cushion in this appropriation. In 1958, the fiscal year began, of course, on July 1, 1957. This bill went into effect in December of 1956. I believe it was December 7. The billings did not begin to achieve anywhere near a normal level until the end of April, so, when we came forward with the fiscal year 1958 budget, I believe, on the record, we were very frank to admit that we did not have at that time sufficient factual data upon which to make a good, solid projection; the figures we transmitted at that time were the best estimate we could make with the meager information available.

(The following was submitted for the record:)

The following quotations are taken from the hearings on the fiscal year 1958 requirement for dependents' care in civilian facilities:

(P. 886:) "Mr. SHEPPARD. Do you anticipate that the funds requested in this activity and other places in the Navy's budget will meet the needs of the Dependents' Medical Care Act?

"Admiral HOGAN. As yet, we do not have enough experience, but, with the facts at hand, this is the best estimation we can give you, Mr. Chairman."

(Pp. 890–891:) "Mr. ANDREWS. And your estimate here of $31,873,000 for 1958 is, more or less a guess; it is your best guess as to the amount needed?

"Admiral HOGAN. That is right, sir.

"Mr. ANDREWS. You have had no figures in the past to guide you in your estimate for the future?

"Admiral HOGAN. That is right.

"Mr. ANDREWS. It could be $50 million a year. Is that right?"

(Pp. 891–892:) "Mr. WIGGLESWORTH. Admiral, I am not clear as to how you arrive at this estimate, which is, admittedly, at best an educated guess. In 1957 you had $3,214,000, and you want that plus $28,659,000 in fiscal 1958. I understand that increase is wholly for the dependents' care legislation."

(Pp. 896–897:) "Mr. WIGGLESWORTH. In other words, this whole program is, more or less, like some of the veteran-benefit programs. The money that we have to pay dependents is dependent on the actual number of patients that develop. If you need more money than this, you will have to come back for it; if the number of patients anticipated does not materialize to use up the money that you are requesting, you simply do not use it?

"Admiral HOGAN. That is right.

"Mr. WIGGLESWORTH. It is a vested right, under the statute, in respect to these eligible dependents?

"Admiral HOGAN. Yes, sir.

"Mr. WIGGLESWORTH. Is that correct?

"Admiral HOGAN. That is right.

"Mr. OSTERTAG. You have no crystal ball in which you can gaze and determine how many people are going to be sick, or whether they are going to call on the Navy to administer to them?

"Admiral HOGAN. No, sir. As we mentioned earlier, we figure 4.4 dependents per 1,000, on a daily basis, throughout the year will require hospitalization. We multiply that by the estimated number of dependents, deduct the number of patients to be cared for in naval and other Federal hospitals, and get 1,315 patients that we feel will be in the civilian hospitals during each day of the current year; that times 365 days times $50 comes out to this figure of $24 million, approximately."

Mr. FLOOD. You are going to stand by your guns in best Navy tradition. You did not have enough experience to project these things and next year, also in the best Navy tradition, because of your experience, you will do much better?

Admiral GILMORE. We sincerely hope to.

Mr. FLOOD. All right.

Mr. SIKES. Mr. Thomas?

Mr. THOMAS. No questions.

Admiral BEARDSLEY. May I add one thing on that, Mr. Chairman, to reinforce that?

This started in the first week of December of 1956; the 1958 budget final decisions were being made in the Defense Department, and the Bureau of the Budget that very week and, as I recall the situation, the Defense Department, the Bureau of the Budget got together and they decided or made a "guesstimate" on what would happen on a percentage ratio, and applied it across the board for all three services with absolutely no experience.

Mention was made of some experience. We had absolutely no experience at all when this figure was made last year. This year we have more experience. I predict, I don't know whether we have enough money for 1959 or not. We should leave that thought.

Mr. FLOOD. In case anybody in the Pentagon has any idea that "guesstimates" based upon experience, and whatnot, are good, this is a classic example that that is not true.

Admiral BEARDSLEY. I agree.

Mr. SIKES. Mr. Wigglesworth.

Mr. WIGGLESWORTH. I understand your appropriation for this year was $29.8 million for this particular item, so that, if this request now before the committee is allowed, it means that your expenditure for the Navy's share of this medical care and nonnaval facilities will run $37.8 million; is that right?

Admiral BEARDSLEY. That is right.

Mr. WIGGLESWORTH. No further questions, Mr. Chairman.

Mr. SIKES. Mr. Scrivner?

RELIABILITY OF ESTIMATED COST OF PROGRAMS

Mr. SCRIVNER. Mr. Chairman, maybe I have been misinformed or mistaken or did not understand the real reason for and the grounds upon which supplemental requests could be made. As I have listened to this presentation, I do not see where it measures up to the requirements of a supplemental request.

Maybe I am wrong, but the figures that have been developed do show that there has been not only errors in the estimate for fiscal year 1958, but I am quite sure by the time we get through we are going to find a rather large discrepancy in the requests made for fiscal year 1959, all of which bears out the fact that Congress was probably even more inadequately informed when the legislative authorization bill was presented to us. All of which gets a little provoking after repeated performances, because we find ever so many times when the legislative authorization comes up it is said this will be only so much, and it will be a rather minor thing.

We find later that instead of, for example, $1 million that we were told it would cost us, it costs 8 or 10 million dollars.

I sincerely trust and I urgently request that, come the next presentation, we will be a little closer to the mark than when you come up to back some legislation authorization bills that is the first bite only. Tell us how much the entire meal is going to cost.

We will all feel better about it if you do. I am quite sure that we were told that the request for ships and facilities was a tight request, and we would not be within the realm of good judgment at all if we cut it as much as a single, solitary nickel.

Yet you come up now and where the sign on the showcase to us says "Do not touch," the Navy itself comes in and finds $8 million that they can take out of that program, which to me indicates that the program was overestimated by at least that much if not more.

How can you now, when you told us that Congress could not cut that because it was so tight, come in and find $8 million to pay these bills?

Admiral BEARDSLEY. The reason for that is this, sir: After the appropriations were passed last year for 1958, the decision was made by the Defense Department and the administration to reduce forces, the number of operating aircraft and number of civilian personnel. We closed up facilities. This was an effort to keep relative balances. I am sure it had something to do also at that time with the expenditure situation, the debt limit at that time last fall.

The Navy Department, after analyzing its programs last summer and based on the appropriation they got determined that certain force reductions should be made and these were approved. After these force reductions were made in the number of people, civilians, aircraft, and ships, we analyzed appropriations as then approved and it was determined by the Navy Department that approximately $80 million in the various annual appropriations could be and probably should be put into research. We were closing facilities, operating less aircraft. We recommended $80 million be put in reserve. That was followed up by the Defense Department obligation plan last year which showed that money to be put in the reserve.

Throughout the year, as was testified to this committee in connection with POLARIS, parts of that $80 million you approved for transfer for VANGUARD or POLARIS. In this appropriation, the appropriation was $820 million.

We recommended, based on our studies, due to the reduction in forces, that $10 million be put in the reserve at the very beginning of the year. We did not ask for this to be apportioned even.

Subsequent to the beginning of the year, the country negotiated a master Japanese labor agreement with the Japanese Government, and there were some arrears in costs that had to be incurred, and we asked for release of $1.1 million of this reserve for that particular purpose to use it in the appropriation.

That has been authorized.

There was $900,000 which was approved for transfer through the DOD emergency fund into our research and development appropriation for the POLARIS submarine program. That left $8 million in reserve.

While the Navy had requested, I believe, that we get new obligational authority totaling $8 million for dependents' medical care, decision was made to only ask for transfer of this money instead of new money on the basis the money was not going to be used and had been put in reserve by the Navy Department itself last fall.

Mr. SCRIVNER. In other words, this operation was less painful than the other one? In other words, it is less painful to come in and ask for a transfer of funds than it was to ask for an outright appropriation?

Admiral BEARDSLEY. I would say you are correct.

Mr. FLOOD. Will the gentleman let me interject?

Mr. SCRIVNER. Yes, sir. You were kind enough to let me interject.

LIMITATION ON PROGRAM

Mr. Flood. This is what upsets me. This subcommittee, with all seriousness and with great concern for the program, put a limitation of $60 million in the 1959 budget. We did that after serious deliberations, and great searching.

We meant it. Dr. Berry, Assistant Secretary of Defense, who had charge of the investigation on this reported here that $70 million would be the 1959 figure. We said "Well, with military hospitals, this and that and the other thing, we will put a limitation of $60 million on it." Before we went on the floor with that bill a couple of weeks ago we were advised by the Department of Defense the 1958 cost is already $90 million—$90 million for 1958 and for 1959 it will probably be a hundred million.

Half a dozen men in this committee examined him and reexamined him. He insisted and stood by the $70 million and said "That is what it will be. I stand by it. I ran the investigations."

Now we, for the reasons I state, I repeat, then said "Well, we will supply the difference and make it $60 million as a ceiling."

We went on the floor then, and before we got the bill passed in the House, the Department of Defense advised us, in a matter of weeks, they were wrong by $20 miillion. It is now $90 million for 1958. They indicated it would probably be a hundred million for 1959, 2 or 3 weeks after this committee, on information from the Department, stuck our neck out and put a ceiling at $60 million on it. We are wrong by $40 million now.

BUREAU OF THE BUDGET ACTION

That is only the rule of one thing, gentlemen: The Bureau of the Budget is trying to run this Congress, and is trying to run this Government, and they are deciding what the figures are going to be for everything, regardless of testimony, experience, witnesses, committees, Congress, or anything.

Mr. Sikes. What do you mean "trying"?

Mr. Flood. I withdraw "trying." The Bureau of the Budget is putting into this budget any figures they feel like putting in in order to withhold the actual costs that they know or should know that this and many other programs are going to cost the taxpayers, committing a deliberate misrepresentation of the cost of administering this Government.

I never saw a better example in a hundred years than this one. We are wrong by $40 million now. The fault is not the Navy or the Army or the Air Force or the Department of Defense; it is some glorified clerk at the Bureau of the Budget who is putting misrepresentation and falsification in this budget, deliberately misrepresenting to the Congress and to the taxpayer, and using the men of the Pentagon as mouthpieces to channel this deliberately manipulated budget. It is an outrage. It should be investigated. It is criminal.

Mr. Sikes. Mr. Scrivner.

Mr. Scrivner. Of course here again the gentleman from Pennsylvania and I disagree, because if I know the military very well—and I think I do after about 30 to 35 military budgets, I have never yet seen them where they were a mouthpiece of the Bureau of the Budget.

Mr. FLOOD. They do not want to be. They simply are.

Mr. SCRIVNER. I do not think they are. I am quite sure they make their estimates and present them without regard to what the Bureau of the Budget says as far as their estimates are concerned. When they came in here and testified, Mr. Flood, I listened to the whole story. We are talking now about this medical care.

Each one of the services themselves made their estimate of what it was going to cost. I will venture to say that is what happened to the Navy this time.

ORIGIN OF ESTIMATE

Admiral, just to get this matter clear, were the figures that were presented to us for medical care for the Navy, either fiscal 1957, 1958, or 1959, the estimates made by the Navy or by other persons?

Admiral HOGAN. They were made by the Navy and modified by the Department of Defense and the Bureau of the Budget.

Mr. FLOOD. Will the gentleman yield for this question?

Is it not true, Admiral, that the Navy submitted a figure of $55 a day to the Budget and the Budget cut it down to $50?

Is that not true? On this very program you submitted a figure of $55 a day to the Bureau of the Budget, if I am not mistaken from prior testimony, and it is the Bureau of the Budget that cut it down to $50?

That alone would be responsible for the Navy problem. That is a budget mistake.

Admiral GILMORE. Our experience, sir, was $50.85. It was balanced out with other departments and a figure per patient-day in civilian hospitals of $50.25 for fiscal year 1959 was placed in the budget.

Mr. FLOOD. Placed in the budget?

Admiral GILMORE. Yes, sir.

Mr. FLOOD. By the Budget?

Admiral GILMORE. It was by all services on a compromise arrangement.

Mr. FLOOD. If that is true, how are you short $8 million and all the other services combined only $12 million?

Admiral GILMORE. The $8 million is for 1958. I am unaware of how much the other two services are short.

Mr. FLOOD. They are short $12 million altogether and you are short $8 million by yourself.

Admiral GILMORE. We are of course utilizing a bit more of the program by our personnel than the Army is, and conversely a bit less than the Air Force.

Mr. FLOOD. That is quite a diminutive.

Mr. SIKES. I would like to remind you we have another subject we would like to get into as soon as we can.

Mr. SCRIVNER. That is all.

Mr. SIKES. Mr. Ford?

Mr. FORD. No question .

Mr. SIKES. Is there any other testimony on this subject?

Mr. ARMSTRONG. No, sir.

Elimination of New Ships and Conversions of Existing Ships From Shipbuilding and Conversion Program

WITNESS LIST

HON. J. SINCLAIR ARMSTRONG, ASSISTANT SECRETARY OF THE NAVY (FINANCIAL MANAGEMENT)

VICE ADM. T. S. COMBS, USN, DEPUTY CHIEF OF NAVAL OPERATIONS (FLEET OPERATIONS, READINESS, RESEARCH AND DEVELOPMENT)

REAR ADM. A. G. MUMMA, USN, CHIEF, BUREAU OF SHIPS

Mr. Sikes. I have a letter from the Secretary of the Navy which I shall submit for printing in the record.

(The letter referred to follows:)

Department of the Navy,
Office of the Secretary,
Washington, D. C., June 9, 1958.

Hon. Clarence Cannon,
Chairman, Committee on Appropriations,
House of Representatives, Washington, D. C.

My Dear Mr. Chairman: I am writing to apprise you of the Navy's plans to eliminate certain new ships and conversions of existing ships from the fiscal 1957 and fiscal 1958 shipbuilding and conversion programs in order to compensate for cost increases applicable to these and prior programs. These increases have become apparent as a result of our annual May repricing, in this case for the fiscal year 1960 budget. Unbudgeted advances in wage and material costs and refinement of previous estimates of ship projects of new design incorporating nuclear power, complex electronics equipment and missile weapons systems, are the principal causes of these increases.

The Navy estimates at this time that the fiscal 1958 program, to remain fully funded, must be repriced upward by $233 million. The estimated cost of the fiscal 1957 and prior years' programs reflects an increase of $268 million, representing a total increase of $501 million in programs previously funded and authorized.

In view of the fact that this sum is too large to be deferred for the fiscal 1960 budget consideration, it becomes necessary to compensate now for these deficiencies, and thus adhere to the full funding principle. The Navy, therefore, considers it advisable at this time to eliminate construction of 2 escort vessels (DE) and conversion of 1 amphibious assault ship (LPH) from the fiscal 1957 program, and 4 guided-missile frigates (DLG) and 2 guided-missile cruiser conversions (CG) from the fiscal 1958 program.

Elimination of the above-mentioned ships will compensate for all known funding deficiencies in the Navy's currently authorized shipbuilding and conversion program. There has been little progress to date on these ships. Contracts for the four guided missile frigates (DLG) have not yet been awarded. Commencement of the amphibious assault ship conversion (LPH) has only recently started. No work is being done at present on the two escort vessels (DE) because of the original contractor's financial difficulties. The two guided missile cruiser conversions are follow ships which can be replaced in later programs with minimum loss of time, because work has not yet been started on them. Elimination of these nine ships rather than any other combination of ships will have the least harmful effect on fleet effectiveness and readiness, and will have a minimum disruptive effect on shipyard workload and employment. The resulting loss of work can largely be compensated for by the award of ships in the fiscal 1959 program. The Government will, of course, incur some expense through cessation of work and contract termination, but the above selected cancellations will keep this expense to a minimum, estimated at $8.3 million.

With kindest regards,
Sincerely yours,

Thomas Slater.

Mr. Sikes. By that letter, which was dated June 9, the Navy notified the Committee on Appropriations that in order for the 1958 and 1957 and prior years, shipbuilding and conversion programs to remain on a fully funded basis, it would be necessary to eliminate certain ships from the planned construction and conversion program.

It was pointed out that this was necessary because of unbudgeted advances in wage and material costs and refinement of previous estimates, and that the total of such increased costs would be $501 million.

To make up this $501 million the Navy has taken steps to eliminate 9 ships from the planned program. The committee wants to determine just why these particular 9 ships were selected, rather than some other ships that are in the program.

Mr. Secretary, who do you have here to explain how the Navy made this selection?

Mr. ARMSTRONG. Mr. Chairman, we have with us Vice Admiral Combs, whom I mentioned in my statement, and Rear Admiral Mumma, and also the other supporting witnesses accompanying these, as well as Admiral Beardsley and myself from the Comptroller's Office.

I believe our first witness should be Vice Admiral Combs.

Mr. SIKES. Please proceed, Admiral Combs.

STATEMENT OF DEPUTY CHIEF OF NAVAL OPERATIONS (FLEET OPERATIONS, READINESS, RESEARCH AND DEVELOPMENT)

Admiral COMBS. Mr. Chairman, when we found that we were unable to buy all the ships which we had scheduled in these fiscal years 1958 and earlier, we immediately proceeded to determine what we should do, bearing in mind these main considerations: What we wanted to do was, since we had to save this money, was to cancel ships which would minimize the long-term adverse effect on the required operational capabilities of the Navy and have the least disruptive effect on an orderly shipbuilding program.

BASIS FOR DECISION TO CANCEL SHIPS IN LIEU OF REQUESTING ADDITIONAL APPROPRIATION

Mr. SIKES. Right at that stage, Admiral Combs, I do not want to interrupt your statement, but I would like to know why you decided to cancel ships rather than come back to Congress and ask for additional funds for the entire program.

We funded these ships originally on the basis that they were essential for the Navy's purpose. Now apparently they were not required.

Will you explain that?

Admiral COMBS. We have felt and we still feel that they are required for the Navy's program, in our long-range shipbuilding program, but we felt also that we must have our shipbuilding program fully funded within the amount of dollars we had available.

Mr. SIKES. Did you ask the Secretary of Defense for permission to come back for additional money for the entire program?

Admiral COMBS. No, sir.

Mr. SIKES. It was decided within the Navy not to ask for additional money?

Admiral COMBS. Not to ask for additional money for the 1957 and 1958 programs, sir. I mean 1957 and prior, and the 1958 program.

Mr. SIKES. Why was that? Why was it considered that this is not of sufficient importance to ask for additional money, rather than to eliminate the nine ships?

Mr. ARMSTRONG. I would have to cite the testimony which was given by the Secretary of the Navy and the Chief of Naval Operations before the Senate committee on that subject.

Mr. FLOOD. What was the gist of it?

Mr. ARMSTRONG. The gist of it, Mr. Flood, is as Admiral Combs has testified, that having in mind the situation of these ships, in which a good many of them, indeed most of them were not yet placed under contract, and having in mind the existence of the full funding directive which is binding on the Department of the Navy with respect to which we have no choice, we felt that we were obligated to put this program in a financial situation in conformity with the full funding directive.

Mr. FLOOD. Doesn't that same law apply to the House of Representatives as well as the Senate?

Mr. ARMSTRONG. Yes, sir.

Mr. FLOOD. Was it in existence? Were you not aware of it at the time you were here?

Mr. ARMSTRONG. Not the pricing, sir. The pricing has been done by the Bureau of Ships on an annual basis in May, and the repricing of these programs with this drastic change in costs occurred when the Bureau of Ships completed their May repricing in connection with next year's budget.

Mr. FLOOD. Mr. Secretary, I had two of my people look this over when that newspaper story came out and I can find nothing in the testimony of any civilian or uniformed member of the Navy which would indicate to this subcommittee that this possibility would arise at all on these ships.

Mr. ARMSTRONG. I agree with you.

Mr. FLOOD. I think that is outrageous. I went before this subcommittee and argued for this Navy case as though I had a uniform on. In 2 weeks you pulled the rug out from under me. I can look silly myself without having the Navy help me.

Mr. ARMSTRONG. Admiral Mumma testified in full about the repricing in connection with the 1959 budget.

Mr. SIKES. Let us get a picture of the selection of these nine ships. Will you proceed, Admiral Combs? You can supply a statement for the record telling why it was decided to eliminate 9 ships rather than to press for funds for the 9 ships in conformity with programs submitted to Congress.

Mr. ARMSTRONG. Yes, sir.

(The data to be supplied follow:)

The decision of the Navy to cancel ships in lieu of requesting the appropriation of additional funds to cover the cost increases was based on various factors. It is customary for the Navy annually to request the appropriation of funds to cover increases in cost of prior-year shipbuilding programs. This was done in the fiscal year 1959 budget to the extent that these costs were known when the budget was submitted. When the additional amount required in repricing for the fiscal year 1960 budget submission became known about June 1, 1958, and it appeared to be of unprecedented magnitude, it was considered to be too late for action in the fiscal year 1959 budget, which had already passed the House, and therefore the shortage could not be funded prior to enactment of the fiscal year 1960 appropriation. In view of this delay in reestablishing the full funding of approved programs in accordance with policy of the Department of Defense approved by this committee, and in view of the lapse of time before funds could become available for obligation through fiscal year 1960 appropriations, it was considered that the only course open to the Navy was to request Presidential authorization to cancel certain ships, which was obtained, and then immediately to advise the committees of Congress of the situation, which was done.

SELECTION OF SHIPS TO BE ELIMINATED

Mr. SIKES. Will you tell us why after you decided to eliminate ships from the program you selected these particular ships?

Admiral COMBS. We selected these particular ships for these reasons, which I am proceeding with, sir:

We wanted to minimize the long-term adverse effect on required operational capabilities of the Navy, and we wished to insure that the 1959 and the 1960 programs could proceed in accordance with presently approved objectives, and we also wanted to select ships that would have the least harmful effects on the shipbuilding industry and its labor programs, so with those criteria, we examined all of our ships in the shipbuilding programs prior to 1959.

In 1957 we had two diesel-driven DE's which we have included in the ships which we propose to be eliminated if ships have to be cut out.

These ships had been requested and granted by the Congress, 2 to be built in the 1956 program and 2 to be built in the 1957 program. These were small ships. They cost about $9 million apiece. The two in 1957 program had been contracted for by a shipbuilding company in Lorain, Ohio. This shipbuilding company had financial difficulties and found that they were unable to carry out their contract. The building of these ships was then transferred to a shipbuilding company in Avondale, La. This made them late getting started. Not much had been spent on these ships. We have two exactly like them in the 1956 program, and we thought that it would be less disruptive to our whole program, since we felt we had to reduce ships, to consider those. We put them on our list.

We then looked over the list further and in the 1957 program we have one of our CVE class ships to be converted to an LPH.

The work had started on that ship, but at this time construction work was practically at a standstill, due to the 1958 expenditure limitations.

We also considered the fact that in the 1958 program we had a new LPH granted us and that there is one in the 1959 program now before the Congress. These new ships cost us, as now priced, some $42 million apiece. We found that this conversion of an old ship to an LPH would, due to the price rises and all, give us a ship for about $34 million, which still would be on an old hull and would not be as satisfactory for the long haul as the new LPH is.

We considered that this ship was one that we should put on our list.

Going further into the programs, we came to the DLG program.

Mr. WIGGLESWORTH. What year?

Admiral COMBS. In 1958. In 1958, we had granted to us seven DLG's. The obligation and expenditure ceilings have prevented, so far, the award for contracting of all seven of those ships. They have not been contracted for yet.

Mr. THOMAS. What does that initial stand for?

NOMENCLATURE OF CANCELED SHIPS

Mr. SIKES. I think it would be well for you to place in the record a statement showing what each of these terms means.

Admiral COMBS. A DLG is a guided missile frigate.

Mr. SIKES. It would be well for you to submit for the record what each of these types are, for those who want to follow the record.

Admiral COMBS. Yes, sir.

(The information requested follows:)

NOMENCLATURE OF CANCELED SHIPS

LPH—amphibious assault ship.
DE—escort vessel, formerly called destroyer escort.
CG—guided-missile cruiser.
DLG—guided-missile frigate. The name "frigate" describes the ship which formerly was named "destroyer leader."

Admiral COMBS. These destroyer leaders are of a new design, and plans were not available as early as those for other ships. We found that we could, without losing funds, cancel 4 of the 7 frigates which had not yet been contracted for. We then examined the guided-missile cruisers. We had three conversions of cruisers to guided-missile cruisers in the 1958 program. All three of these ships had been scheduled to be built at naval shipyards.

May I say that one of them is to be retained. It will be a LEAD ship. We include two of these for cancellation. I will go back just a moment to recap here the total number of ships selected for cancellation:

Two destroyer escorts, the one amphibious assault ship (conversion), four frigates and two cruisers (conversions). It appeared that these will have the least adverse effect on one of the most important jobs which we have to do, which is antisubmarine warfare. We felt that the antisubmarine-warfare program and the POLARIS missile submarine program should not be curtailed, and we therefore selected these ships which I have just mentioned.

Mr. SIKES. Will you supply for the record a listing of the ships and the price of each?

Admiral COMBS. Yes, sir.

(The data to be supplied follows:)

Long title	Short title	Program (fiscal year)	Number	June 1960 cost in millions of dollars
Escort vessel	DE	1957	2	18.7
Amphibious assault ship	LPH (conversion)	1957	1	33.6
Guided-missile frigate	DLG	1958	4	231.0
Guided-missile cruiser	CG (conversion)	1958	2	218.0
Total				501.3

Mr. SIKES. Is the total of the nine $500 million?

Admiral COMBS. We have the figures. Yes, sir.

REPRICING ACTIONS

Mr. SIKES. In your statement you indicated these decreases have become apparent as a result of Navy's annual May repricing in connection with the preparation of the fiscal year 1960 budget.

Over $500 million is a sizable proportion of the total shipbuilding and conversion program.

I would like to ask why were these increased costs not noted prior to May of this year?

Admiral MUMMA. Mr. Chairman, the situation pertained to repricing of 1957 and prior years budgets in one group, and a repricing of the 1958 budget as another group, and the reason that the quantity appears large is that, because we had a large number of ships with unknown firm prices on them in the 1957 and 1958 programs, the decision had been made in the Navy Department not to reprice the 1958 program in the 1959 budget, so to a considerable extent we are wrapping up 2 repricings in 1.

Mr. FLOOD. Aren't you impressed, Admiral, by this figure—$500 million—for repricing? What in the world do you expect us to think here in this committee? Here is a repricing operation, cancellation of program, $500 million. This is not a bagatelle; this is a fantastic thing.

Admiral MUMMA. I am thoroughly aware of this, Mr. Flood. This is my responsibility; I assure you I take it very seriously.

Mr. FLOOD. So do I. I have a responsibility here. I found this out in the newspaper one day at breakfast. I had not heard it hinted by anybody all year.

Admiral MUMMA. May I call your attention to a response to you to one of your questions during the regular hearings. I testified during the regular hearings this year:

> In the past we used to conservatively price to try to insure that we looked pretty good going in to the Congress. This caused pretty high repricings.

Mr. FLOOD. I read that last night.

Admiral MUMMA (reading):

> Then the pendulum swung the other way and there was a tendency to put a little too much money in to insure you were not criticized for the increases in price. Just about the time we had that pendulum steady on dead center and were estimating our program very accurately we began getting into the nuclear program and guided-missile business, both of which are extremely difficult to price and they have upset the applecart again to a marked degree. I think we are struggling with a difficult situation.

At the time I made that statement, I knew of some contemplated price increases in the nuclear part of the program. I also knew we were having some fluctuations, some plus, some minus, in the guided-missile part of the program. We found as a result of our complete roundup in May that this order of magnitude existed in these two chunks, the 1957 and prior, amounting to an amount of money of $268 million, and the repricing of the 1958 program alone, which amounted to $233 million.

Admiral MUMMA. I would like to draw your attention to the chart that has been passed out to you, which shows the financial history of the shipbuilding appropriations.

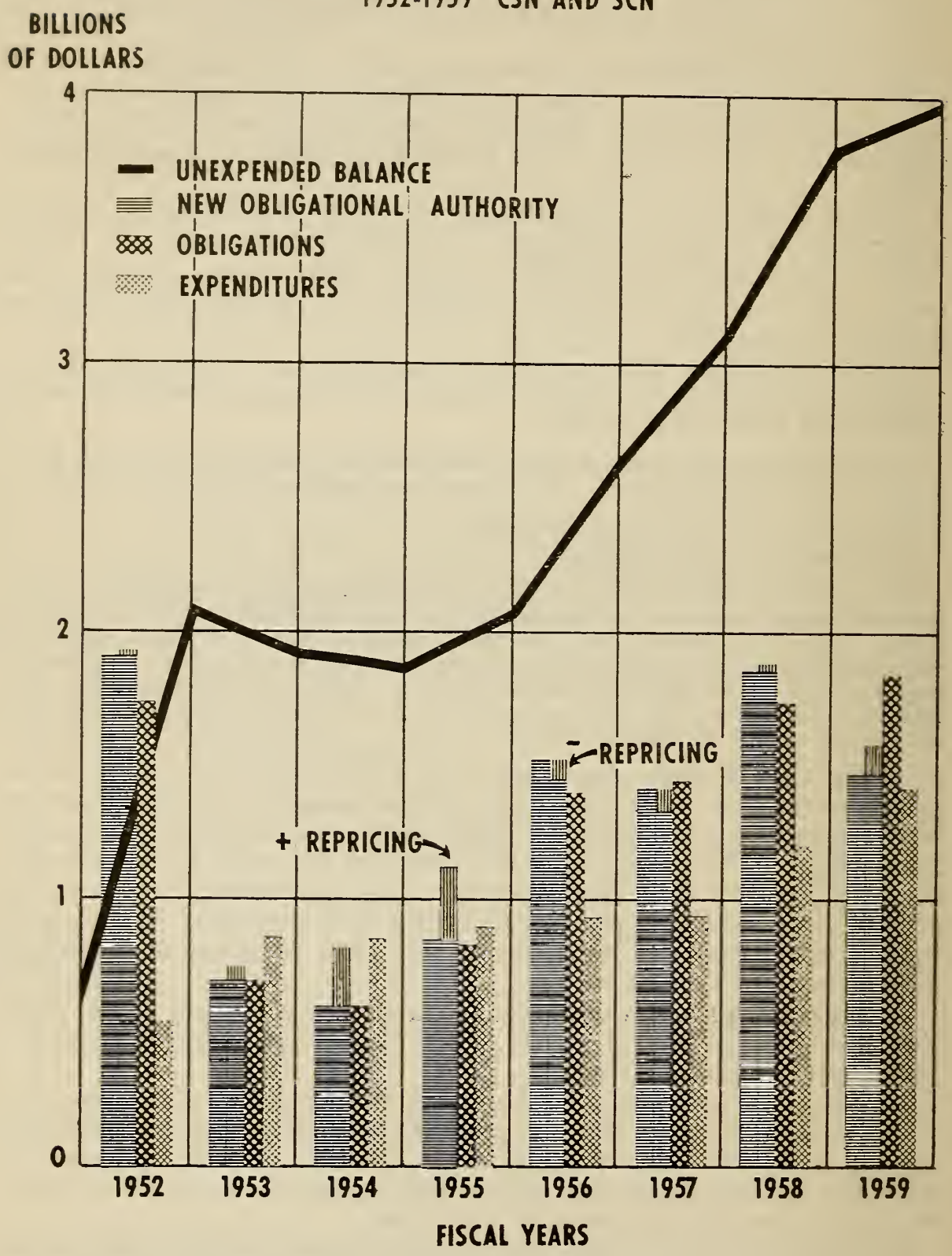
You can see, by looking at the unexpended balance of the program, which is the black line, that the unexpended balance has been running through 1952 and 1955 at about a $2 billion level. At that time we normally contemplated that a repricing figure of about $100 million would be about normal to such a program.

We find, however, as the program has grown, in 1956, 1957, 1958, and 1959, by increased appropriations the unexpended balance, of course, grows and this is the amount of money that you are pushing ahead of you yet to be done, now $4 billion, so that a 5 percent increase annually, labor and material alone amounts to $200 million.

(The chart referred to above follows:)

FINANCIAL HISTORY OF SHIPBUILDING APPROPRIATIONS

1952-1959 CSN AND SCN



We are not allowed to budget for anticipated increases of price of labor and material.

Mr. SIKES. Do you have repricing appraisals only once a year?

Admiral MUMMA. We have in the past. That has been satisfactory up to now. We find now, and I have already instituted a procedure of repricing internally, quarterly.

Mr. SIKES. Over what period of time have these price increases accumulated that are represented by the $501 million?

Admiral MUMMA. The $501 million represents the total of $233 million from inception of the design to now, final award of some of the 1958 ships, whereas the 1957 amount of $268 million represents labor and material increases and other things on all previous years' programs from 1957, 1956, 1955, 1954, 1953, and so forth, all since the 1959 budget submission.

Mr. THOMAS. Percentagewise, how much is it on how much money?

Admiral MUMMA. Our average increased labor and material alone is 5½ percent over the previous years, sir, per year.

SUMMARY OF COST INCREASES

Mr. SIKES. I would like to have you give the committee in detail, exactly where the cost increases have occurred, or, rather, where they have been applied, on what ships, what programs, and in what amounts.

Admiral MUMMA. I have a complete summary that can be furnished the committee, sir, but I might give you just some highlights of it.

Mr. SIKES. All right, if you will.

Admiral MUMMA. In the 1957 and prior years programs, of the total amount of $268 million, $132 million is accounted for by increased labor and material costs since the firming of the 1959 budget submission.

The next largest sum is taken care of by the descriptive name of "Characteristics and other changes," changes within characteristics of the ships, and that amounts to about $110 million in all of those previous programs.

Refinement of estimates amounts to about $26 million, and stretch-out accounts for about $13.5 million. The subtotal for some ships not included in the summary is a negative repricing figure of about $20 million.

Jumping to the next large category of the 1958 program, the 1958 program is repriced to the total amount of $233 million, of which $94 million is accounted for by labor and material price increases. The changes within characteristics amount to approximately $40 million. Refining of the estimates accounts for approximately $91 million, and included in this is a large portion of the nuclear change in price.

This is corrected for by a subtotal of ships not included in the summary of about $6.7 million price increase.

Mr. THOMAS. What is the total dollar value for 1958?

Admiral MUMMA. $233 million.

Mr. THOMAS. That is your repricing. What is your total dollar volume?

Admiral MUMMA. The total dollar volume of the program is $1.9 billion.

Mr. THOMAS. It is less than 5 percent, then.

Admiral MUMMA. It is a little over 5 percent, I believe, sir.

Mr. THOMAS. Is that on an annual basis?

Admiral MUMMA. Yes, sir.

Mr. THOMAS. Does some of this program go back beyond 1958?

Admiral MUMMA. No, sir. That is annual.

Mr. THOMAS. Excuse me for interrupting you. That is a matter beyond your control. You cannot do anything in the world about it, can you? You might redesign your ships and save a hundred million, but as far as the cost increase in labor and material, you cannot do anything about that.

Admiral MUMMA. That is correct.

Mr. THOMAS. Your biggest item is what you denominate as refinement. That is an item that you can control, but the other items you cannot.

Admiral MUMMA. To give a summary of the whole situation, sir, for all the programs about 44 percent of the repricing increase is caused by labor and material estimates changes.

Mr. THOMAS. 44 percent.

Admiral MUMMA. 44 percent. Refinement of estimate accounts for about 25 percent.

Mr. SCRIVNER. What do you mean by refinement of estimate?

Admiral MUMMA. This means——

Mr. SCRIVNER. Redesign or something?

Admiral MUMMA. No, sir. That comes under change in characteristics. What we mean by refinement of estimate is that we anticipate a ship will cost us so much or reactor will cost us so much and when we get the bids it is that much higher.

In other words, we cannot charge it to straight labor and material because we just made a bum guess on the estimate.

Mr. THOMAS. Commonly known as an overrun, is it not, Admiral?

Admiral MUMMA. Yes, sir.

The next largest change is in the change of characteristics, which are the kind of thing in which we change the design of the radar that we finally would install in a ship, whereas we had originally anticipated such and such a radar would be installed, and we get a newer and later and more expensive model and decide before the ship is finally completed to install that later model radar.

This type of thing amounts to approximately 27 percent of the remainder, with stretchout amounting to only a little over 2 percent.

Mr. SIKES. I would like to take a reading on the desires of the committee. May I ask about how much time you will want to my right? I am trying to determine whether we shall have these witnesses back after lunch or not.

Mr. THOMAS. About 5 seconds, Mr. Chairman.

Mr. SIKES. And on my left, about how much time, Mr. Wigglesworth, do you anticipate you will want?

Mr. SCRIVNER. Let's keep going and get through.

Mr. FLOOD. There are a lot of things I would like to ask, but this has nothing to do with legislation. This is an explanation of an administrative act, and what is the use of wasting time on it. They will pay no attention to us, anyhow.

EFFECT OF CUTBACK ON ANTISUBMARINE WARFARE CAPABILITY

Mr. SIKES. What effect will this cutback in shipbuilding and conversion and ship selection have on the antisubmarine-warfare capability?

Admiral COMBS. It will have the least effect on antisubmarine-warfare capability of any choice we could make from the total list of ships which we have considered.

Mr. SIKES. Why were these particular ships selected, rather than such ships as aircraft carriers?

Admiral COMBS. Aircraft carriers, Mr. Chairman, contribute to antisubmarine warfare. They contribute to limited war, and we felt that they should be included rather than these which we selected for cancellation.

EFFECT OF PRICE-INCREASE VALUATION ON 1959 PROGRAM

Mr. SIKES. What has been the effect of this price-increase evaluation on the 1959 shipbuilding and conversion program now before the Congress?

Admiral MUMMA. We have present unfirm estimates of the 1959 program, but they, of course, are not verified by any awards and, therefore, are only reestimates that indicate at the present time that, if the ships contained in the 1959 program went forward and were approved by the House and the Senate both, we would, with the addition, the augmentation that has been made by the House, anticipate that we might be, at the present time, visualizing $80 million or so of repricing for 1960 program.

We anticipate that that will increase between now and the time the 1960 budget is submitted because of our quarterly repricing to take into account increased labor and material costs.

EFFECT OF CANCELLATION ON SUBSEQUENT REQUESTS

Mr. SIKES. Will any of these nine ships be included in subsequent requests to the Congress for the appropriation of additional funds? That is, insofar as you can determine now.

Admiral MUMMA. Maybe I should attempt to answer the first part of that by saying that ships like these ships will appear in subsequent programs. The exact configuration might be slightly different, and these specific ships, apparently, will not appear again.

Admiral COMBS. The type of DE, destroyer escort, which I talk about, will not appear again, sir. As I described in my original statement, we had 4 of those ships programed, 2 which we are getting and these 2 which we elected to discontinue. Those are smaller than the DE's which we have in the 1960 program.

Mr. FLOOD. What kind of missile do those DLG's fire?

Admiral COMBS. DLG's fire the Terrier, Mr. Flood. We have the DLG's coming along in 1960, also.

Mr. SIKES. Mr. Thomas?

Mr. THOMAS. No questions.

Mr. SIKES. Mr. Wigglesworth?

Mr. WIGGLESWORTH. I have no questions.

Mr. SIKES. Mr. Scrivner?

Mr. SCRIVNER. I have a few, Mr. Chairman.

First, I cannot quite understand why, if we appropriated money for one of these ships in 1956, that money is still available and you haven't contracted for the vessel a long time ago.

Admiral MUMMA. The money has been contracted for.

Mr. SCRIVNER. How does it become available now, after 3 years?

Admiral MUMMA. We obligate, for example, in case of a normal ship program, somewhere around 60 or 70 percent of the total ship price at the beginning of that award schedule, and that is usually for the shipyard work, et cetera, to start the ship. The engines and machinery are bought at about that same time and out of that money, but some of the equipment is bought at a later stage in the ship's construction for the purpose of insuring that the very latest equipment is installed when the ship is completed.

Mr. SCRIVNER. I understand that. When you go back to the original statement, that isn't the way I understood it. Perhaps we do not have time for this now, but the explanation that you have given up to now, as far as fiscal 1956 moneys are concerned, is not complete or satisfactory to me. It does not well explain why, after all these years, you still have some of those moneys available that you can now cancel out.

Admiral MUMMA. I don't believe we are talking of any ships in 1956, sir.

Mr. SCRIVNER. I didn't make the statement. I merely listened to it. I have the figure down here that fiscal year 1956 funds was mentioned by 1 of you 2 gentlemen.

Admiral COMBS. I mentioned 1956. We had 4 of the escort vessels; 2 in 1956, 2 in 1957, Mr. Scrivner. The 1956 ships, we are buying.

Mr. SCRIVNER. 1957, you are not?

Admiral COMBS. If you will look on the chart, the second item, two destroyer escorts, 1957, awarded but delayed.

Mr. SCRIVNER. I have a note on that. I have the 1956 notation. I could not understand that. The 1957 you explain fully, as having been let to some concern in Ohio.

Admiral COMBS. The 1956 ships we are getting.

Mr. SCRIVNER. All right, I apparently misunderstood.

When we look at the rest of the explanation, while you had to do some pretty severe investigation to meet the rising costs, as I look at it, probably some of these decisions would have been good decisions even if you had not been pinched for money. If you are going to convert and spend $32 million and still have an old ship when you can get a new one for $42 million, it doesn't sound like very good business to do the converting, except you were a little pushed for time and had the hull and could probably do the work quicker.

Admiral COMBS. As time went on we found that out. At the very beginning the estimated cost of conversion of that ship amounted to some $19 million. When the characteristics were firm the price of $19 million increased to about $32 million.

Mr. SCRIVNER. I know. It does not take that long to convert a ship.

Admiral MUMMA. No. The shipwork had actually been started, sir, but in the meantime the refinement of the design was completed, and also the labor and material costs increased. This ship is delayed almost an entire year.

Mr. SCRIVNER. That bears out the statement I made. Even if you had not been pinched for money, this was a good decision.

Admiral MUMMA. Relative to a new ship, yes, sir.

Mr. SCRIVNER. My recollection is we had some discussion about these diesel destroyers in the 1955 appropriation. I wasn't overly impressed with them then.

Why are you now able to figure that you can drop 2 and just have 2 finally completed?

Admiral COMBS. The two that we are dropping have been very much delayed because of the hassle that the contractors have gotten into, and the fact that we had to shift the contract of these ships from one to another. That delayed the destroyer escorts for a long time. You can see from the fact sheet the net cancellation costs are $2.2 million; we have expended $3½ million to date of the $18.7 million. That indicates that $13 million is required to complete them.

(The fact sheet is as follows:)

Fact sheet—Navy ship cancellation

[Dollars in millions]

Ship	Number	Present estimate	Obligated to date	Expended to date	Net cancellation cost	Net unrecovered	Funds to complete if restored	Remarks
LPH1 (Converted.) (1957.) (Awarded.) (Delayed.)	1	$33.6	$22.3	[1] $2.3	$0.3	$2.6	$31	Could be replaced by the addition of new construction amphibious assault ship in fiscal year 1960 budget at cost of $40,000,000 with ultimate delay in delivery of 27 months.
DE (1957.) (Awarded.) (Delayed.)	2	18.7	14.3	[2] 3.5	2.2	5.7	13	2 of 4 diesel-driven austere war production prototypes. Could be replaced by escort vessels of improved *Courtney* (DE–1021) class at an average cost of $19,000,000 each and an ultimate delay in delivery of 33 months. In comparison with DE–1035 and DE–1036 these ships will be 5 knots faster and possess very long range detection and kill capability and facilities for operation with ASW helicopter.
CG (converted) (1958) (awarded)	2	218.0	105.2	[3] 1.2	−1.2	0	218	Material now under procurement will be used in fiscal year 1959 program ships. Work on these ships has not started and hence there are no unrecoverable costs. Additional ships could be added in the fiscal year 1960 program to restore the previous balance of the fleet.
DLG (1958) (not awarded)	4	231.0	40.3	[3] .5	−.5	0	231	Material now under procurement will be used in fiscal year 1959 ships. Work on these ships has not started and hence there are no unrecoverable costs. Additional ships could be added in fiscal year 1960 program to restore the previous balance of the fleet.
Total		501.3	182.1	7.5	.8	[4] 8.3	493	

[1] Rip-out and material.
[2] Work and material. Work now stopped due to loss by American Ship and subcontract to Avondale.
[3] Material only.
[4] Of this total of $8,300,000, a portion is in usable material not recoverable to the SCN appropriation but ultimately usable in other Navy programs. This now indeterminate portion will ultimately reduce net cost to Government.

Mr. SCRIVNER. Ships in many ways are like planes. In other words, what looks good today, 3 years from now you may want something different and what comes off the line today a few years from now will be on its way out anyway. After you have waited that long to get going on what you had in mind 5 or 6 years ago, looks like pretty good business to me, because you will be able to get a better ship, a more modern device, anyway.

Admiral COMBS. We learn a lot about ships as well as other things in 3 years.

Mr. SCRIVNER. That is why I make the statement, even if the Navy had not been pinched for money, some of those decisions as they look to me were very good decisions anyway. Perhaps it is as well we ran into the situation. We may find we are better off than we thought we were going to be.

Admiral COMBS. It might well be.

Mr. SCRIVNER. That is all, Mr. Chairman.

Mr. SIKES. Thank you, gentlemen.

SUBCOMMITTEE ON DEPARTMENTS OF LABOR AND HEALTH, EDUCATION, AND WELFARE, AND RELATED AGENCIES APPROPRIATIONS

JOHN E. FOGARTY, Rhode Island, Chairman

WINFIELD K. DENTON, Indiana
FRED MARSHALL, Minnesota
MELVIN R. LAIRD, Wisconsin
ELFORD A. CEDERBERG, Michigan

WEDNESDAY, JUNE 25, 1958.

UNITED STATES SOLDIERS' HOME

WITNESSES

GEN. WADE H. HAISLIP, GOVERNOR, UNITED STATES SOLDIERS' HOME
R. A. GRITTON, BUDGET ANALYST

Mr. FOGARTY. We will start hearings this afternoon on the various supplemental requests for the Departments of Labor and Health, Education, and Welfare and related agencies that are included in House Document No. 394. Without objection, the clerk will be directed to insert the pertinent sections of that document in the record immediately prior to the committee's consideration of each of these items.

(The section of H. Doc. No. 394 relating to the United States Soldiers' Home follows:)

"UNITED STATES SOLDIERS' HOME

"Limitation on Operation and Maintenance and Capital Outlay

"The amount authorized by the Departments of Labor, and Health, Education, and Welfare Appropriation Act, 1959, to be paid from the Soldiers' Home permanent fund, for maintenance and operation of the Home, is increased by $232,000, of which $125,000 shall remain available until June 30, 1960, for construction planning."

This proposed increase in limitation includes $125,000 for the development of preliminary plans for a new 512-bed domiciliary building to relieve the present critical shortage of beds and $107,000 to cover the additional cost during fiscal year 1959 of wage-board pay increases granted April 6, 1958.

Mr. FOGARTY. We are pleased to have you with us again, General. Do you have a statement for the committee?

GENERAL STATEMENT

General HAISLIP. Yes, sir.

I appreciate the opportunity of justifying the request for additional funds for maintenance and operation of the United States Soldiers' Home for fiscal year 1959. I would like to remind the committee that the proposed supplemental of $232,000, if approved, will be taken from the Soldiers' Home Trust Fund and not from the general revenues of the Treasury.

Subsequent to the House hearings on the Home's regular 1959 budget estimates, the Army-Air Force Wage Board promulgated a schedule of increased rates for blue-collar workers. Since the policy of the home is to adhere to wage data issued by this Board, increased rates for wage-board employees were put into effect April 6, 1958. The additional cost of fiscal year 1959, estimated to be $107,000, is based on applying the new rates to the various wage-board positions now occupied at the Home.

A recent survey indicated that of 1,474 domiciliary beds available, 1,460 were assigned and the balance committed to new applicants soon to be released from the home hospital. In addition, there are 92 qualified members awaiting admission to the home.

The House recognized the seriousness of this situation and in the regular appropriation bill for fiscal year 1959, $58,500 was provided for the temporary rehabilitation of the old Sheridan Building which has been held in a standby condition since new construction in 1954. Rehabilitation of this building will provide 168 beds of a marginal character for an overflow of members pending the completion of new facilities.

Since May 1957, there has been a net gain in membership each month, except one, and the total gains during that period was 197. This is a 300-percent increase in admissions as compared to the net gain of 63 members during a similar period the year before. This situation is most critical and it is certain that the time has come to prepare substantive plans for new construction and to proceed with that construction in order to preclude a buildup of a large waiting list of members who will have to be denied admission because of the lack of accommodations.

In October 1957, the district engineer was asked to estimate the cost of developing preliminary plans for a domiciliary building which could be expanded as the need arose. A cost of $125,000 was determined and this sum is asked for now, for inclusion in the appropriation bill for 1959. It is urgently needed. A similar situation faced the home in 1951 when a large waiting list developed and the home had to resort to placing beds in lobbies and corridors. The preliminary plans will provide for a 4-winged structure housing a total of 905 members. It is planned to construct, as soon as practicable, the central portion of 2 inner wings which will house 512 members. Funds

for increasing the frontage and adding the two outer wings will be requested as future needs develop.

LEGAL AUTHORITY FOR CONSTRUCTION OF BUILDINGS

Mr. FOGARTY. Thank you, General.

What is the home's legal authority for the construction of buildings?

General HAISLIP. Our basic law provides that no new buildings shall be erected or new grounds purchased, nor shall any expenditure of more than $5,000 be made, until the action of the board thereon shall be approved by the Secretary of the Army. The legal citations are title 24 United States Code, section 57; section 3, act of March 3, 1883; act of July 26, 1947.

Mr. FOGARTY. Has he approved this?

General HAISLIP. This went through the Secretary of the Army and was approved by him and sent to the Bureau of the Budget by the Secretary.

PLANNING AND CONSTRUCTION SCHEDULE

Mr. FOGARTY. How soon will you be ready to start actual construction?

General HAISLIP. We plan to put in the 1960 budget for the final plans and specifications. We hope to request, a year later, funds for the building.

Mr. FOGARTY. You mean it will take you 2 years to get the plans and specifications drawn up?

General HAISLIP. It generally does, sir.

DESCRIPTION OF BUILDING

Mr. FOGARTY. What is going to be the cost?

General HAISLIP. The building will probably cost around $5 million; between $5 and $6 million. We do not know yet because we have not——

Mr. FOGARTY. How many will it take care of?

General HAISLIP. Nine hundred.

Mr. FOGARTY. That is a sizable building.

General HAISLIP. We plan to build first the central part of the building which will house 500 and then build the further frontage and the two wings as the need requires.

REHABILITATION OF SHERIDAN BUILDING

Mr. FOGARTY. You are rehabilitating the old Sheridan Building. We gave you enough over the 1959 budget request to do that?

General HAISLIP. Yes, sir.

Mr. FOGARTY. How soon will it be possible to have that building ready for occupancy?

General HAISLIP. Before the end of the year. We propose, and I have had a very careful survey made of all of our living quarters, to take in people on an emergency basis by putting beds in hallways and basements and crowding beds into occupied rooms to where we hope to be able to not turn anybody away until the Sheridan Building is finished. We hope that we will be able to last pretty well until this

new building is completed without being forced to deny people entrance, who are entitled to enter.

Mr. FOGARTY. This $107,000 is for wage board increases, over which you have no control?

General HAISLIP. Yes, sir.

Mr. FOGARTY. The remaining $125,000 is for the preliminary plans for the new building?

General HAISLIP. Yes, sir.

Mr. FOGARTY. Thank you, General.

General HAISLIP. Thank you.

WEDNESDAY, JUNE 25, 1958.

SOCIAL SECURITY ADMINISTRATION REQUEST FOR EXEMPTION OF HEARING EXAMINERS FROM REQUIREMENTS OF ADMINISTRATIVE PROCEDURE ACT

WITNESS

DONALD C. BEELAR, CHAIRMAN, SECTION OF ADMINISTRATIVE LAW, AMERICAN BAR ASSOCIATION

Mr. FOGARTY. Mr. Beelar, you are the chairman of the section of administrative law of the American Bar Association?

Mr. BEELAR. Yes, sir.

Mr. FOGARTY. Mr. Beelar wrote me a letter dated June 16 and requested to be heard.

I will have that letter inserted in the record at this point.

(The letter referred to follows:)

AMERICAN BAR ASSOCIATION,
SECTION OF ADMINISTRATIVE LAW,
Washington, D. C., June 16, 1958.

The Honorable JOHN E. FOGARTY,
Chairman, Subcommittee on Departments of Labor and Health, Education, and Welfare, House of Representatives, Washington, D. C.

DEAR CONGRESSMAN FOGARTY: It has been noted in House of Representatives Document No. 394, 85th Congress, 2d session, that the Social Security Administration of the Department of Health, Education, and Welfare is requesting authority from Congress to appoint hearing examiners who will hold hearings under title II of the Social Security Act, as amended, without regard to the provisions of the Administrative Procedure Act, as amended (5 U. S. C. 1001–1011) for a period not to extend beyond December 31, 1959.

We believe the requested authority to appoint trial examiners without compliance with the Administrative Procedure Act is highly inadvisable and should not be approved. The Department's proceedings for which exempt hearing officials are sought constitute disputes between a citizen and the Department. These disputes are to litigate the Departments' prior administrative denial of the citizen's claim. The citizen is entitled to a fair hearing before an impartial hearing officer who can exercise some independence of judgment. Under the exemption authority requested these principles would disregard. The hearing would be before a subordinate employee. This would contravene what Congress has determined essential to fair play in such situations where the agency is a judge in its own behalf. We believe the Department can work out appropriate procedures with the Civil Service Commission for appointment of temporary trial examiners without compromising basic safeguards.

This section which is authorized by the American Bar Association to take action necessary to preserve the gains made by the adoption of the Administrative Procedure Act requests an opportunity to appear before your subcommittee in opposition to any exemption of the Administrative Procedure Act.

Very truly yours,

DONALD C. BEELAR.

PREPARED STATEMENTS

Mr. FOGARTY. Do you have a statement to make?

Mr. BEELAR. Yes, I have a prepared statement of five pages.

Mr. FOGARTY. If it is satisfactory with you we will insert that in the record and you may tell us the gist of it.

(The statement referred to follows:)

STATEMENT OF DONALD C. BEELAR, CHAIRMAN, ADMINISTRATIVE LAW SECTION, AMERICAN BAR ASSOCIATION

I am Donald C. Beelar, chairman of the section of administrative law of the American Bar Association, and I appear on behalf of the American Bar Association in opposition to the request of the Department of Health, Education, and Welfare for authority to employ additional hearing officers on a temporary basis without regard to the provisions of the Administrative Procedure Act. The text of the requested exemption provision to which my remarks are directed reads as follows:

"* * * *Provided*, That persons may be temporarily appointed without regard to the provisions of the Administrative Procedure Act (5 U. S. C. 1001–1011), to serve as hearing examiners to hold hearings under title II of the Social Security Act, as amended, but such temporary appointments shall terminate not later than December 31, 1959."

The proposal of the Social Security Administration of the Department of Health, Education, and Welfare to appoint persons temporarily as hearing examiners without regard to the provisions of the Administrative Procedure Act is contrary to the principles of sound administrative practice and due process. The request for the authority to appoint in this matter persons to serve as hearing examiners is predicated, we are told, on a backlog of disability cases brought about by the retroactive effect of the disability provisions of the 1956 amendments to the Social Security Act which, it is anticipated by the Department, can be handled by the addition of some 53 hearing examiners over and above the currently authorized permanent staff of 101 hearing examiners. Persons to be appointed under such exemption are to hold hearings under title II of the Social Security Act, as amended. These "temporary appointees," we understand, are to be recruited from the present staff of the Bureau of Old Age and Survivors' Insurance of the Social Security Administration, who are now and have been processing these disability claims in their initial consideration by the Department, and after their tenure of temporary duty as hearing examiners—appointed without regard to the Administrative Procedure Act—such persons are expected to return to their prior positions on the Social Security Administration staff.

The American Bar Association is interested in resolving the serious problem which faces the Department resulting from the pending load of hearing cases but strongly opposes the method proposed by the Department.

The purpose of section 11 of the Administrative Procedure Act "is to render hearing examiners independent and secure in their tenure and compensation" [1]; and, as was stated in the Report on Appointment and Status of Federal Hearing Officers, made by the Committee on Hearing Officers of the President's Conference on Administrative Procedure:

"More than any other single factor, the quality of the hearing officer determines the quality of the administrative process." [2]

Under the proposed exemption the very keystone of the hearing examiner structure would be undermined. There could be no independence as contemplated by the Congress in the enactment of the Administrative Procedure Act, since these "exempt" hearing officers could be hired, fired or transferred at the mere whim of the agency. The provision in section 11 of the Administrative Procedure Act with respect to removal only for good cause would have no application. It would be a return to the status which hearing examiners held prior to the enactment of the Administrative Procedure Act and that status was not conducive to independent action, decision or responsibility. The proposal would place such "exempt" hearing officers in the status of "mere employees of an agency" and this is what, among other things, the Administrative Procedure Act was specifically designed to avoid. [3]

[1] Administrative Procedure Act, Legislative History, S. Doc. 248, 79th Cong., 2d sess., p. 215.

[2] Draft Report, Committee on Hearing Officers of the President's Conference on Administrative Procedure, p. 1.

[3] P. 280, Legislative History, supra.

The proposal to appoint hearing officers without regard to the provisions of the Administrative Procedure Act would nullify, in addition to the independence-and-tenure provisions of the Administrative Procedure Act, the compensation provisions. Instead of the salaries being under the control of the Civil Service Commission, the agency would have control. The Attorney General has pointed out that:

"If salaries and promotions are subject to agency control, there is always danger that a subtle influence will be exerted upon the examiners to decide in accordance with agency wishes." [4]

It is difficult to imagine a situation in which a person could be subjected to greater "subtle influence" than under the plan proposed by the Department of Health, Education, and Welfare. First, the temporary hearing officer's appointment as such would be without regard to any qualifications under the Administrative Procedure Act; second, even his temporary appointment would be at the pleasure of the agency; and, third, his return to his former permanent position would also be subject to the will of the agency.

Under the disability benefit statute the grant or approval of a claim of disability can be made administratively but after such denial or disapproval, the claimant is entitled to a hearing and decision on the record. These decisions are subject to judicial review before the Federal district courts. These temporary hearing officers would be in the position of acting upon a matter which initially has been turned down administratively by the agency. In such a situation the requirement for freedom from prejudgment or "subtle influence" and the great need for independence cannot be overstated.

Further, under the proposed procedure, controversies between a citizen and the Government arising under the identical statute and the same, or very similar circumstances would be heard by two different groups of hearing officers; one group would be composed of the agency's permanent staff of hearing examiners appointed pursuant to section 11 of the Administrative Procedure Act and serving with its safeguards as to independence, tenure, compensation, etc., and the other group would be composed of the temporary hearing officers who would lack such safeguards.

We do not believe that the rights of any citizen should be adjudicated with anything less than full due process. While the claims involved may be small sums when compared to amounts involved in other adjudication, they may constitute the sole means of providing the necessities of life for the individual claimant and the right of such individuals to due process is as great as the litigant whose claim totals millions of dollars. In fact, the little claimant who cannot afford or does not see the necessity of competent legal counsel to press his claim may need greater safeguards than does the claimant who has a battery of competent counsel.

Social Security Act

Section 205 (b)

(b) The Administrator (Secretary) is directed to make findings of fact and decisions as to the rights of any individual applying for a payment under this title. Whenever requested by any such individual or whenever requested by a wife, widow, former wife divorced, husband, widower, child, or parent who makes a showing in writing that his or her rights may be prejudiced by any decision the (Secretary) has rendered, he shall give such applicant and such other individual reasonable notice and opportunity for a hearing with respect to such decision, and if a hearing is held, shall, on the basis of evidence adduced at the hearing, affirm, modify, or reverse his finding of fact and such decision. The (Secretary) is further authorized, on his own motion, to hold such hearings and to conduct such investigations and other proceedings as he may deem necessary or proper for the administration of this title. In the course of any hearing, investigation, or other proceeding, he may administer oaths and affirmations, examine witnesses, and receive evidence. Evidence may be received at any hearing before the (Secretary) even though inadmissible under rules of evidence applicable to court procedure.

[4] 41 Ops. Attorney General, No. 14 (February 23, 1951).

STATEMENT OF MRS. FANNEY N. LITVIN

Mr. BEELAR. I also have a one-page statement by Mrs. Fanney N. Litvin, who is the chairman of the standing committee of the American Bar Association's committee on civil service.

Mr. FOGARTY. All right, we will put that in the record.

(The statement referred to follows:)

STATEMENT OF FANNEY N. LITVIN, CHAIRMAN, STANDING COMMITTEE OF THE AMERICAN BAR ASSOCIATION

I am Fanney N. Litvin. I am chairman of the standing committee on civil service of the American Bar Association.

From the study made of adjudication by the Department of Health, Education, and Welfare under the Social Security Act of 1939, as amended, I am convinced that it would be a grave mistake to let down the bars, even for a temporary period not to extend beyond December 31, 1959, so as to permit that agency to appoint hearing examiners who will hold hearings under title II of the Social Security Act as amended, without regard to the provisions of the Administrative Procedure Act, as amended.

The hearing examiners of the Department of Health, Education, and Welfare (whom they call referees) are that agency's primary contacts with citizens engaged in disputes with them arising out of the Department's prior administrative denials of citizens' claims. These claims, many of which involve close family and personal relationships, represent matters of great social and administrative need to citizens, who for the most part are particularly unsophisticated litigants. Exempt officials are sought to handle such disputes. These citizens are certainly entitled to a fair hearing before impartial, independent, and qualified officials. Under the exemption authority requested in House Document No. 394, 85th Congress, 2d session, these hearings would come before subordinate employees of the Department, and the Department employer would be a judge in its own behalf. This is a reversal of the doctrine of fair play and there would seem to be no sound reason why the Department cannot work out appropriate procedures with the Civil Service Commission for appointment of temporary trial examiners, without compromising basic safeguards, as have other agencies under emergency circumstances.

Mr. BEELAR. May I have noted that appearing with me is Mr. Jerome H. Simonds, who is chairman of our section's committee on health, education, and welfare.

Mr. FOGARTY. Go right ahead, Mr. Beelar.

OBJECTIONS TO PROPOSED EXEMPTION FROM ADMINISTRATIVE PROCEDURE ACT

Mr. BEELAR. We are here to request your consideration in opposition to the Department's proposal for authority to appoint hearing examiners exempt from the Administrative Procedure Act. We understand their story is that they have a substantial backlog of cases principally in the disability area and that this backlog was engendered by the 1956 amendment and that they anticipate that with an additional complement of about 50 hearing examiners that by the end of 1959 they could work this backlog down to a point where it would be more normal than it is.

We certainly are strongly opposed to any undue delay in this type of proceeding. This is one where delay seems to be to the disadvantage of the citizen.

On the other hand, we do not think that action should be taken which would result in impairing fair play in the determination of these cases. This is a type of proceeding which is extremely personal to the citizen. It is an area where the Department comes in direct contact, or where the Government comes in direct contact with the

citizen in a matter affecting his personal welfare, and it is one where there must be clearly an appearance of justice.

I have heard it said that justice is not done unless it is recognized by the other side, even if you lose. We feel that the proposal to make appointments temporarily not in accord with the Administrative Procedure Act would result in a double standard of justice in the administration of these cases and would be very unfortunate, we think, and it is not only inadvisable but unnecessary.

I would like to briefly just state——

Mr. FOGARTY. Give us a specific example of how a double standard of justice might prevail because of this.

Mr. BEELAR. At present the examiners appointed under the Administrative Procedure Act have security of tenure. Their qualifications have been determined by someone outside of the Department involved and they are protected in what they do. They have a measure of independent judgment and they are not subordinate employees put in a position of having to make a determination which in their own conscience they think they should make, but which would override the decision that the superior of this person has made. I think that I can illustrate by simply enumerating the differences between the status of these two types of people.

In other words, what do we mean when we say—

appointed without regard to the provisions of the Administrative Procedure Act?

Well, under the Administrative Procedure Act, the selection of the appointee is made by the Civil Service Commission and under this proposal it would be made by the Department. The civil service laws would apply to the regular examiner and this proposal would apparently exempt appointments from civil service. Under the regular appointments, the qualifications and competence are determined by the Civil Service Commission. They have standards as to what is required of a person who is to sit in judgment, between his employer agency and the citizen. It gives him independence and under this proposed law what would be the qualifications or competence are totally left to the discretion of the agency.

The Administrative Procedure Act requires that cases be assigned in rotation. In other words, the agency cannot maneuver the assignment to examiners. Under this law there would be no such problem and who assigns hearing cases could pick and choose between the exempt examiners. Under the regular trial examiners, they can be removed only for good cause subject to a right of hearing before the Civil Service Commission. These exempt people would have no such privilege.

The compensation of a regular trial examiner is set by the Civil Service Commission independent of the agency. Under this proposal compensation, changes and promotion, or demotion, or whatever would be within the discretion of the agency. Efficiency ratings in the case of the Administrative Procedure Act examiners do not apply. In this case, the administrative people who are involved in these proceedings on the Government side would be determining the efficiency ratings of these temporary examiners and promotions would be under the Department entirely, whereas the Administrative Procedure Act examiners are promoted only by the Civil Service Commission.

The Administrative Procedure Act, section 11, examiner is not under the direction or supervision of the agency people for whom he

works whereas the temporary exempt hearing officer would be. Under the Administrative Procedure Act the presiding examiner could be challenged for bias or disqualification. This would be unascertainable under temporary examiners, and in my judgment, a citizen who goes to a hearing before an examiner would have a right to know whether his case is being tried by an independent examiner or by a subordinate employee who has moved from an administrative desk into the judicial chair.

I think if the exempt examiner is one who has been associated with these cases, the citizen would have a very good ground for legally challenging the qualifications of that person to sit in his case. That is what I mean by "double standards".

You would have the same class of cases heard at the discretion of the agency before an independent trial examiner or before one of these, what I would call, subordinate examiners. In short, we feel that this program is fraught with opportunities for favoritism, bureaucratic or internal politics, injustice and influence. This proposal might also possibly to some extent include litigation. We think that this particular type of proceeding is one where the citizen should have fair play and expeditious determination of his rights.

POSSIBLE ALTERNATIVES

We believe that the additional examiners can be obtained by the Department by special arrangements with the Civil Service Commission.

I have no direct familiarity with the Department's proceedings, but I do recall that in the case of the Federal Communications Commission a few years ago, they had this tremendous backlog of television applications by reason of a freeze. That problem was met by the Federal Communications Commission obtaining authority, in cooperation with the Civil Service Commission, to appoint section 11 Administrative Procedure Act trial examiners for a temporary period.

That program worked quite well. The CSC cooperated and they got good examiners and took care of the backlog reasonably well and the Commission's problems at the trial examiner level, at least, have not been criticized very much. I think that the Civil Service Commission has permitted agencies to resort to what we call selective certification. In other words, the Federal Power Commission would tell the Civil Service Commission, "We have a person we would like to appoint as an Administrative Procedure Act examiner. Will you examine him and determine his qualifications? If you find him qualified to be put on a register where he can be appointed, then we can appoint him by that process."

I say that there have been devices but whether they are to be sponsored or not, at least precedents, for meeting a problem of this sort without a blanket exemption.

Mr. Fogarty. Is that what you are advocating?

Mr. Beelar. I would say that this would be one way of dealing with the problem. We are clearly opposed to the exemption and we think it would be most unfortunate and would have repercussions, in our judgment.

Mr. Laird. I just want to follow up on that, Mr. Chairman, with a question.

You believe that it would be proper for the Social Security Administrator to send a list of his employees over to the Civil Service Commission and ask that they be certified?

Mr. BEELAR. Temporary appointees. I say there has been a precedent.

Mr. LAIRD. That is what you advocate doing?

Mr. BEELAR. I would say that this would be decidedly preferable to an exemption, because in that case, at least, you would have the Civil Service Commission independently examining their qualifications to see if they were——

Mr. LAIRD. The problem here is that no one likes to take these jobs when there are other agencies requesting examiners. They do not like to take the position on a temporary basis like this.

Mr. BEELAR. There is a problem, but to me that would be the lesser of the two evils of picking these people out of the agency behind the desk and saying, "For one year and a half you can be a judge in the cases that you have been handling administratively."

These are cases where the agencies handling them have turned the citizen down and said, "You can have a fair hearing."

This procedure would be analagous to saying that the Court of Claims has a backlog so we will make temporary judges out of the Department of Justice lawyers who have been in the Claims Division; or for the Tax Court to say that they will make the administrative people in the Bureau of Internal Revenue temporary examiners to get over the backlog in the Tax Court.

They would be judging cases that they prejudged administratively.

Mr. DENTON. How are you going to appoint people permanently when you have a temporary need for them?

Mr. BEELAR. There is a precedent under the Administrative Procedure Act in the civil services regulations for appointing a person to a trial examiner position for a specified period.

Mr. DENTON. Where would you get him from?

Mr. LAIRD. You would get the same person. You would get the same person doing the job that they plan under this language.

Mr. BEELAR. Maybe so or maybe no. This would depend on what the Civil Service Commission has available in the way of applicants.

Mr. LAIRD. If the HEW Department sent over this list of people they would like to have certified, they surely will be people who have been working on this social security program.

Mr. BEELAR. It might be those people. In this case it probably would be, to some extent, but at least the people, if appointed, would have the protection of the act. They would be appointed to a job——

Mr. LAIRD. There is no protection under the act when you are only going to do it temporarily until December 31, 1959?

Mr. BEELAR. I say that we only have one experience where the Federal Communications Commission—the number was not large, only 7 or 8—but at least a 50-percent increase where they obtained people on that basis. Those people do have some chance to work in a permanent appointment by attrition, and so forth. They also have a chance to stay on as trial examiners in other agencies.

Mr. LAIRD. The Civil Service Commission says now that they cannot supply these people? People should be entitled to a hearing on their particular cases. It seems to me that they are entitled to be heard. I think the system that you advocate may be all right, but

you are going to end up with the same people under the system that you advocate, as if this language were in the bill.

Mr. BEELAR. I was saying that as a choice of the two, the procedure which the Civil Service Commission has itself used in other cases would be preferable to exemption. We are not too happy about the Civil Service Commission's administration of the trial examiner program in terms of salaries or independence, but we are opposed to exemptions and having people who are mere subordinate employees appear as a judge over——

Mr. LAIRD. The same people in your proceeding are going to appear as judge?

Mr. BEELAR. Yes; but they would have a different status.

Mr. LAIRD. They would have temporary status under either.

Mr. BEELAR. That is true, but they would have the protection of that status at the end of that period.

Mr. LAIRD. No; they would not have any protection at the end of the period, if there was no longer any need for them.

Mr. BEELAR. Yes, but during that period the proceeding would have the protection of the examiner who certainly could not be maneuvered or influenced while he is performing that job. As to whether the Civil Service Commission could protect him in occupying or reoccupying the job he had previously, I do not know.

Mr. LAIRD. He is protected under that because, under this amendment, he would be protected under his old job, would he not?

Mr. BEELAR. I think it is entirely up to the agency. They say they would be outside the civil service.

Mr. LAIRD. Only during the period they served on the temporary appointment?

Mr. BEELAR. What happened is that he could be favored or punished, depending on his performance. Our immediate preference would be to have no exemptions.

BACKLOG AND DELAY IN HEARING PROCESS

Mr. FOGARTY. You do not mean that, do you? With 10 months' backlog of work—with these people who are claiming disability benefits waiting 10 months, we have an extremely bad situation. You do not think such a situation should be allowed to continue, do you?

Mr. BEELAR. We certainly do not, but we do not want to say that they have a right of hearing which is merely a facade, which is no right at all. In my judgment, this would not be a hearing, and this would violate principles of a fair hearing.

Mr. FOGARTY. Something has to be done?

Mr. BEELAR. Correct.

Mr. FOGARTY. I hope you would not want them to wait 10 months for their appeal to be heard. I know that I certainly do not.

As to the right way to approach it, I do not know, but it is clear that something different has to be done, because it has been getting worse instead of better under the current procedures.

Mr. BEELAR. I think a year or so ago when they started on the program, they appointed, as I recall, 32 trial examiners out of the Civil Service Commission. They gave them qualifying training within 4 weeks, and then they were trying cases.

Mr. FOGARTY. But the facts are now that they are 10 months behind?

Mr. BEELAR. Yes, but I have stayed away from——

Mr. FOGARTY. Something has to be done.

Mr. BEELAR. How this came about is something that I am not familiar with at all. I realize that we have a situation which should be dealt with, but I should think it would not be dealt with at the expense of denying what would really be——

Mr. LAIRD. What would you tell one of these claimants as to why their case cannot be heard?

Mr. BEELAR. This is a very serious problem, not only in the Department, but in other courts and agencies; a very serious problem.

Mr. LAIRD. Many of these people feel that they need these funds on a monthly basis.

Mr. BEELAR. The fact is that we do not have adequate facilities to take care of the workload. We have this in the courts, and it is a very serious problem, but I do not think we can get at it by saying that we will have an arbitrary proceeding.

Mr. FOGARTY. What have you done, as an organization, then, to advise the Congress that we are in bad shape as far as facilities to handle many of these cases?

Mr. BEELAR. We have had a very deliberately specified program, which is in bills.

Mr. FOGARTY. What are some of the bills?

Mr. BEELAR. In the House, there are H. R. 3350, 3349, 7006, and in the Senate it is S. 932, a bill on which we expect to have hearings.

Mr. FOGARTY. What are the House bills?

Mr. BEELAR. Companion bills to set up a new trial-examiner system and an office to administer it.

Mr. FOGARTY. Overall?

Mr. BEELAR. An overall program of increased salaries and additional jobs, and an organized system of statistics to ascertain delay times and get appointments comparable to what they are trying to do with the courts.

Mr. FOGARTY. If there are no further questions, we thank you very much, Mr. Beelar.

Mr. BEELAR. Thank you, Mr. Chairman.

DEPARTMENT OF LABOR

WEDNESDAY, JUNE 25, 1958.

OFFICE OF THE SOLICITOR

WITNESSES

JAMES E. DODSON, ADMINISTRATIVE ASSISTANT SECRETARY
CHARLES D. CARLSON, ASSISTANT TO THE ADMINISTRATIVE ASSISTANT SECRETARY

OFFICE OF THE SOLICITOR

STUART ROTHMAN, SOLICITOR OF LABOR
JAMES R. BEAIRD, ACTING ASSISTANT SOLICITOR
WILLARD H. SHAFFER, ACTING ADMINISTRATIVE OFFICER

BUREAU OF EMPLOYMENT SECURITY

ROBERT C. GOODWIN, DIRECTOR
E. L. KEENAN, DEPUTY DIRECTOR
ARTHUR W. MOTLEY, ASSISTANT DIRECTOR FOR EMPLOYMENT SERVICE
R. G. WAGENET, ASSISTANT DIRECTOR FOR UNEMPLOYMENT INSURANCE
H. DANIEL DARLING, DEPUTY ASSISTANT DIRECTOR, PROGRAM REPORTS AND ACTIVITY ANALYSIS
EUGENE LOVE, CHIEF, DIVISION OF BUDGETS AND FISCAL OPERATIONS
HERBERT A. MEYER, CHIEF, ESTIMATES AND EXPENDITURES BRANCH

(The following excerpt from H. Doc. No. 394 is placed in the hearings record in accordance with an earlier order of the subcommittee:)

"OFFICE OF THE SOLICITOR

"SALARIES AND EXPENSES

"For an additional amount for 'Salaries and expenses', $110,000."

This proposed supplemental appropriation is to provide the additional funds necessary to permit the Secretary of Labor to make the increased number of wage determinations required under the Federal-Aid Highway Act of 1958 and an accelerated construction program.

Mr. FOGARTY. We now have before us the Solicitor of the Department of Labor, Mr. Rothman.

Do you have a statement for the committee?

Mr. ROTHMAN. Yes, Mr. Fogarty.

Mr. FOGARTY. Go ahead.

GENERAL STATEMENT

Mr. ROTHMAN. I appreciate this opportunity to discuss the revised budget estimates of the Office of the Solicitor for fiscal year 1959.

Our original request was for $2,321,000, the same amount as was appropriated for fiscal 1958. This request was based on estimates which included no major workload increases in the various activities. In part, it was based on the issuance of an estimated 34,260 wage determinations and 850 enforcement cases in the wage determination

activity. This activity includes the predetermination of wage minimums for federally financed and assisted construction and coordination and enforcement of Federal construction labor standards.

With the recent acceleration in federally financed and assisted construction resulting from current economic policy and recent legislation, such as the Federal-Aid Highway Act of 1958, the various contracting and financing agencies have now revised their estimates of wage determination requirements. These new estimates indicate total requirements during fiscal 1959 of 40,664 wage determinations. This represents an increase of 6,404 or 18 percent over the original estimates.

Reorganization Plan No. 14 of 1950 requires the Secretary of Labor to provide for coordination of administration and consistency of enforcement of the various labor standards laws applicable to federally financed and assisted construction. This is accomplished through a process of education, interpretative services, and investigative efforts coordinated with the various Federal contracting and financing agencies. Eight hundred enforcement cases were originally estimated for fiscal 1958 and 850 for fiscal 1959. Actual experience during fiscal 1958 indicates a total caseload of 981.

A definite correlation exists between the wage determination and coordination and enforcement activities. On the basis of past experience and the estimated increases in the wage determination activities, a workload of 1,150 enforcement cases is estimated for fiscal 1959.

To accommodate this increase in workload, an additional $110,000 is requested for the wage determination activities of the Office of the Solicitor for fiscal 1959. This amount is requested to provide 12 additional positions and other resources to be utilized in the processing of wage determinations and the coordination and enforcement activities in Washington, and six additional positions for decentralized enforcement activities and the consultation and survey requirements of the interstate highway program in the regional offices.

Thank you for permitting me to make this statement, Mr. Chairman.

Mr. FOGARTY. Thank you, Mr. Rothman.

This request is for $110,000?

Mr. ROTHMAN. Yes, sir.

Mr. FOGARTY. Your original request for 1959 was $2,321,000?

Mr. ROTHMAN. Yes, sir.

PURPOSE OF REQUEST

Mr. FOGARTY. In the Budget Bureau's presentation it says that this is to make the increased number of wage determinations required under the Federal Highway Act of 1958 and an accelerated construction program.

They do not mention anything about enforcement. Is there any reason for that?

Mr. ROTHMAN. I know of no reason why the Bureau of the Budget should not have mentioned enforcement. Enforcement is an integral and very important part of this program. It is our plan to use a number of these positions for enforcement activity.

Mr. FOGARTY. As I understand it, $60,780 is for enforcement and only $49,220 for wage determinations.

Mr. ROTHMAN. I believe that is correct.

Mr. FOGARTY. I was wondering if there was any particular reason for the Bureau of the Budget not mentioning the enforcement program?

Mr. ROTHMAN. I do not believe there is any particular reason for it. If I had to determine why it was not mentioned, I would say it was an oversight. If we look at the Davis-Bacon wage determination and enforcement activities, they go hand in hand.

Mr. DODSON. Our presentation to the Bureau of the Budget plainly spelled out the need for enforcement money.

Mr. FOGARTY. Since enforcement needs account for over half of the request, I thought there must have been some reason for the Bureau of the Budget not mentioning it in their presentation to the Congress.

Mr. DODSON. No, sir; I think, as Mr. Rothman indicated, it is an oversight.

Mr. FOGARTY. You really think so?

Mr. DODSON. Yes, sir. There was no mention ever made to me——

ESTIMATED WORKLOAD

Mr. FOGARTY. We will put the table on the last page of the justifications in the record at this point.

(The table referred to follows:)

ATTACHMENT A

Tabulation showing estimated workload for fiscal years 1958 and 1959 based on contacts with principal procurement agencies

	Latest estimate, 1958	Original estimate, 1959	Revised estimate, 1959
Federal Housing Administration	2,000	2,000	2,500
Hospital survey and construction	1,100	1,100	1,500
Atomic Energy Commission	200	200	200
Federal airport administration	1,200	1,200	2,200
General Services Administration	5,500	5,500	6,000
U. S. Coast Guard	550	550	600
Public Housing Administration	1,500	1,500	1,500
Civil Aeronautics Administration	800	800	800
Bureau of Reclamation	450	450	450
CFS, school survey and construction	750	600	1,000
Army	8,000	8,000	9,000
Navy	1,600	1,600	2,000
Air Force	3,000	3,000	3,500
Bureau of Public Roads:			
Direct Federal projects	335	360	500
Interstate highway projects	2,796	2,900	3,914
All other agencies	4,500	4,500	5,000
Total	34,281	34,260	40,664

Mr. FOGARTY. Are the estimates of the various agencies based on the budget estimates or are they based on an estimate of what they think Congress will actually allow for various construction programs?

Mr. ROTHMAN. These estimates are prepared independently by each agency and they are based on such information as is available to the agency. I believe that it is based on the latter, on what they believe the Congress will allow them for construction.

Mr. FOGARTY. I have in mind the fact that the Senate has increased the hospital construction program considerably over what the House already allowed. The increase amounts to $90 million.

I was wondering if they had taken that into consideration.

Mr. ROTHMAN. Mr. Beaird, who has assisted in the preparation of the budget justification, may know more about that point.

Could you help, Mr. Beaird?

Mr. BEAIRD. I do not believe they took that into consideration. I do not believe the Senate had acted at the time these estimates were received from the Public Health Service.

Mr. FOGARTY. So, if a substantial amount of this is allowed by the Congress, that would increase your workload still more.

Mr. ROTHMAN. Yes, sir.

Mr. FOGARTY. Over and above what you are asking for now, would it not?

Mr. ROTHMAN. Yes, it would.

Mr. FOGARTY. That would also pertain to the increases likely to be approved for the civil functions of the Army Corps of Engineers and to the Research Facilities Act, if that is extended and liberalized.

Mr. BEAIRD. Yes, sir.

Mr. FOGARTY. What about the aid to federally impacted school districts? Has that been taken into consideration?

That bill is before the Senate now.

Mr. BEAIRD. They took into consideration, from what I get from the agencies, increased moneys that had been appropriated at the time the estimate was made. I think they made certain allowances for legislation that appeared to have a good chance of going through. There are other programs, such as the community facilities program that was passed by the Senate that would also increase the workload.

Mr. FOGARTY. Thank you very much, Mr. Rothman.

Mr. ROTHMAN. Thank you very much, Mr. Fogarty, and members of the committee.

BUREAU OF EMPLOYMENT SECURITY

(The following excerpt from H. Doc. 394 is placed in the hearings record in accordance with an earlier order of the Subcommittee:)

"BUREAU OF EMPLOYMENT SECURITY

"SALARIES AND EXPENSES

"For an additional amount for 'Salaries and expenses', $347,000."

This appropriation pays the salaries and expenses of the Bureau of Employment Security for supervision of the Federal-State employment security system which embraces 1,800 local unemployment insurance and employment service offices. The increased workload of this system resulting from the rise in insured unemployment has increased the work and responsibilities of the Bureau of Employment Security to an extent that additional staff will be needed in order to permit the Bureau to assure the operation of an adequate employment security system.

GRANTS TO STATES FOR UNEMPLOYMENT COMPENSATION AND EMPLOYMENT SERVICE ADMINISTRATION

"For an additional amount for 'Grants to States for unemployment compensation and employment service administration', $10,600,000."

This appropriation pays the administrative costs of the Federal-State unemployment compensation and employment service programs, and of the Federal programs of unemployment compensation for Federal employees and unemploy-

ment compensation for veterans of the Korean conflict. Workloads have increased substantially in the States and additional funds are necessary to assure prompt and accurate payments to people who are unemployed.

"UNEMPLOYMENT COMPENSATION FOR VETERANS

"For an additional amount for 'Unemployment compensation for veterans', $37,700,000."

This proposed supplemental appropriation is needed to enable benefit payments to be made to Korean veterans during 1959. Claims are being filed, and payments made, at such a rate that additional funds will be necessary for making benefit payments, required by law, for the full year.

"UNEMPLOYMENT COMPENSATION FOR FEDERAL EMPLOYEES

"For an additional amount for 'Unemployment compensation for Federal employees', $36,300,000."

This proposed supplemental appropriation is needed to pay unemployment compensation to former Federal employees in accordance with laws of the States. The number of new claimants and the average amount and duration of benefit payments have increased to such an extent that additional funds will be required to pay former Federal employees unemployment benefits to which they are entitled.

Mr. FOGARTY. Mr. Goodwin, we have seen you quite often this year; have we not?

Mr. GOODWIN. Yes, Mr. Chairman.

Mr. FOGARTY. Go right ahead, Mr. Goodwin.

General Statement

Mr. GOODWIN. Mr. Chairman, if I may I would like to make a short general statement before discussing specifically each of our requests because all of them are related to one problem.

The four supplemental appropriations for 1959 which we are requesting have been made necessary because of the changes in economic activity which have occurred since the President's budget was prepared. You will recall that during several of our hearings in the last few months we discussed the sharp increase in unemployment and the resultant needs of the Federal-State employment security program.

Insured unemployment reached its 1958 peak in the middle of April, when it was 3,334,200 which was a rate of 8.3 percent. Since that time insured unemployment has dropped by 16 percent to a level of 2,793,000 for the week ending June 7, and the rate has declined to 7.0 percent. This drop is slightly larger than the usual seasonal pickup. However, insured unemployment is still 113 percent above that of a year ago. There is no evidence as yet to indicate when a pickup in economic activity will begin to gather momentum, and even after conditions in general show improvement, there is likely to be a lag before unemployment rolls are reduced substantially. For example, in plants where they have been working less than a full week, production can be increased without adding more workers. Another factor to be considered is that the labor force is growing at the rate of about 700,000 per year.

We now estimate that the volume of insured unemployment during fiscal year 1959 will average 2,900,000 per week. This is an increase of 900,000 per week over the 2 million upon which our first budget requests for 1959 were based. In arriving at the estimate of 2,900,000 insured unemployment for 1959 we assumed that, excepting for

vacation shutdowns in July, seasonal factors would gradually reduce insured unemployment from its present levels during the summer months. We also assumed that improvement, on a seasonally adjusted basis, would begin in the late fall and that this improvement would be very gradual. These are our best estimates based upon economic developments as we now know and interpret them. The appropriation requests before you have been based on these estimates.

Salaries and Expenses, Bureau of Employment Security

For salaries and expenses of the Bureau we are requesting an increase of $347,000 which will provide 46 more positions. With the funds already approved by the Congress this will make a total of $6,566,000 and 836 positions.

We need these additional positions to carry out adequately our responsibilities under the conditions now estimated for 1959. In the January–March quarter professional employees in the headquarters of the Bureau worked more than 10,000 hours of uncompensated overtime. Despite this we have not been able to do important and badly needed work in 1958. With insured unemployment expected to be, on the average, 30 percent higher in 1959 than is estimated for 1958, we must have more employees. It is worth mentioning at this point that the State employment security agencies have added more than 11,000 employees since the economic situation changed. We believe that they need these employees and in our grants to States request we are asking for some further increase. During this same period the Bureau has had no increase in staff even though its workloads have increased.

The increase in the workloads has been very substantial. In the January–May 1958 period approximately 2,000 written and telephone requests for labor market information were received. This was about triple the workload in the same period of 1957. Of the 2,000 requests, over 400 were from congressional sources which was four times the load a year earlier. In addition to supplying information to individual congressmen and congressional committees a wide variety of data was furnished to Federal and State agencies and officials, community development groups, business and labor organizations, veteran and civic groups, universities and to all media of the press. To meet these requests it was necessary to secure and analyze special data from the State agencies, prepare statements, tabulations, and graphic materials and conduct a large volume of correspondence. The data furnished covered almost every aspect of the labor market at the National, State, and local levels, eligibility of areas for designation as labor surplus areas, and information about Government programs to provide economic and employment assistance and about a wide variety of legislative proposals.

In addition, the number of requests for information on such matters as duration of benefits, rates of exhaustion of benefit rights, and other benefit payment provisions has more than doubled. During January–May 1958 we received 1,600 such inquiries as compared with 700 in the same 1957 period.

The basic data required to furnish replies to these inquiries comes from the State and local employment security offices. In addition to the workload involved in preparing data needed by the Bureau to

answer inquiries made at the Federal level, the States have had a sharp increase in the number of requests for information from local sources such as governors, legislatures, and labor, veterans, and employer groups. Much of this information involves special studies, analyses, and tabulations. The Bureau normally furnishes the States with the consulting and technical services required to plan such activities. However, we have been unable to meet the very sharp increase in the number of requests for these services because of staff limitations.

The workload in preparing and justifying appropriation requests and analyses of State and Federal legislative proposals, including the estimating of costs, has been unprecedented. For example, it has been necessary to prepare and justify a total of 23 regular and supplemental appropriation requests this year as compared to 7 last year. It has been necessary to make 230 cost estimates for proposed Federal legislation as compared with 90 last year. Even though most State legislatures do not meet in calendar year 1958 we have had an abnormal number of extremely complicated State legislative proposals to review. In 1959 also, it is likely that we will be required to review and advise the States on an abnormally high number of such proposals.

The extremely high volumes of workload experienced by the States in the second half of 1958 and expected for 1959 have resulted in serious problems in almost every area of administration. For example, in the first quarter of calendar year 1958 claims were not being paid as promptly as in the preceding quarter; errors in the calculation of benefit amounts have increased; and overpayment and fraud work has been curtailed as staff was diverted to claims work. The Bureau has the responsibility for working with the States to achieve normal operating efficiency as quickly as possible. With our present staff we have been unable to meet many State requests for technical assistance in such important areas as methods to speed up the payment of benefits, actuarial studies of State trust fund solvency and to assure the accuracy of payments and in resolving management problems resulting from the increase in workloads and staff.

Since we anticipate that insured unemployment will be 30 percent higher on the average in 1959 than it was in 1958, the heavy workload of problems can be expected to continue and the Bureau must have the staff to resolve them.

Grants to States for Unemployment Compensation and Employment Service Administration

For grants to States we are requesting an additional amount of $34,900,000 above the $305 million approved by the Congress. Of the total of $339,900,000, $10 million is for a contingency fund.

As I mentioned earlier, the supplemental request is related to a 2,900,000 weekly average of insured unemployment as compared to the 2 million average for which the Congress approved $305 million. Workload and other costs which the State agencies will have to incur as a result of the increase in insured unemployment from 2 million to 2,900,000, will total $38,191,000. Also to pay the higher amount of unemployment benefits now estimated for Federal workers and Korean veterans will require an additional $3,515,000 for State personal services costs. Therefore, this request provides for $41,706,000 of additional State costs not provided for in the $305

million approved by the Congress. However, we are only requesting an increase of $34,900,000.

The House Appropriations Committee in its report on the regular 1959 request indicated that insufficient weight had been given in the estimates to the savings in unit costs which would accompany the increase in the number of claims. This supplemental estimate takes into account the adjustments made by the States in 1958.

It is extremely significant to note that in meeting the sharp increase in the claims workloads the major adjustments made by the States in 1958 were not in unit costs. They were in other workloads and in functions not directly related to the payment of benefits. However, some of these services were cut below what we consider safe if the integrity of the program is to be maintained. For example, the States used 230 fewer man-years or 17-percent less for the overpayment and fraud function than was allocated despite the very heavy increase in the number of claims. This request provides for a reduction of 7.5 percent from normal personal services cost for the workload estimated. In 1958, this adjustment factor is estimated to be only 5.7 percent.

In other words, in what we are requesting for 1959, we are requiring a larger absorption factor than actually took place and is taking place in fiscal 1958. Less time will be available for each unit of workload than in 1958.

Since the estimate takes into consideration the workload and other adjustments made by the States in 1958 and the increase in the adjustment factor from 5.7 percent in 1958 to 7.5 percent in 1959, all of the $34,900,000 will be required.

Unemployment Compensation for Veterans

For unemployment compensation payments to "Korean" veterans we are requesting an increase of $37,700,000 above the $19 million approved by the Congress for a total of $56,700,000.

In the first 11 months of 1958 State expenditures were $65,525,000 and the fiscal year total is now estimated at $74,900,000.

The increase of $37,700,000 is related to experience in this program since the budget request was prepared last fall.

It is now estimated that 167,400 new claimants will file claims for benefits. While this is an increase of 67,500 over the original 1959 estimate it is 67,600 below the estimate for 1958. The reduction from 1958 is due to the 3-year limitation on eligibility which goes into effect on July 27, 1958, in accordance with title IV of the Veterans Readjustment Assistance Act of 1952, as amended, and the decrease in the number of "Korean" veterans being separated from the Armed Forces. Approximately 4,800,000 veterans will lose their eligibility to file claims on July 27, 1958.

While fewer veterans are expected to file claims than in 1958, the duration of their unemployment is estimated to increase to an average of 15.5 weeks instead of the 9.1 weeks used in the original 1959 request. Our experience in the January–June 1958 period is expected to be 15.9 weeks.

For these reasons it is now estimated that a total of $56,700,000 will be needed in 1959.

Unemployment Compensation for Federal Employees

For the payment of unemployment compensation to Federal workers we are requesting an additional $36,300,000 above the $27,800,000 approved by the Congress, for a total of $64,100,000 for 1959. This is $11,800,000 more than the estimated expenditures of $52,300,000 for 1958.

It is now expected that 210,000 initial claims will be filed in 1959 as compared with the original estimate of 135,000. This is based on our estimated 1958 experience of about 212,000.

With average insured unemployment in the State unemployment insurance programs expected to average about 30 percent higher than in 1958, separated Federal workers will have more difficulty in being reemployed. Therefore, the duration of unemployment of these workers is expected to increase above the 7.8 weeks used in the original estimate. In 1959 the average duration of unemployment is expected to be 11 weeks which is approximately equal to the 11.5 weeks being experienced during the last half of fiscal year 1958.

Also, based on recent experience, the average weekly benefit amount is expected to increase from $28.50 which was used in the original estimate to $30.

In this program, as well as in the one for "Korean" veterans, the payments are required by law and must be paid when due. The money can only be used for benefit payments and is not available for Federal or State administrative costs. Any amounts unobligated for benefits at the end of the fiscal year are returned to the Treasury by the States.

Economic Assumptions

Mr. Fogarty. This statement you just read does not seem to coincide with statements made by the President and the Secretary of Commerce and other leaders of this administration during the last week that things are picking up and inferring that the recession is about over and times are going to be good. Those are the lines I have been reading for the last week or so.

Mr. Goodwin. This is our estimate as to what our workload will be. In other words, it is the estimate of an average of 2.9 million for fiscal year 1959. That has been cleared and approved by the Bureau of the Budget.

Mr. Fogarty. Maybe that was just a lot of political talk we were listening to.

Mr. Goodwin. The 2.9 million is the basic fact on which we proceed.

Mr. Fogarty. Then this optimistic talk is not based on fact?

Mr. Goodwin. We may be off a little bit on it. We may be off as to just when the improvement will start.

Mr. Fogarty. Either you are off or they are off.

Mr. Goodwin. I think our position——

Mr. Fogarty. This is an election year, and I assume they are making election-year speeches. I hope you are giving us the facts as you see them.

Mr. Goodwin. We are giving you our very best judgment on it, Mr. Chairman. I do not think anything we have seen up to now would warrant any more optimisim than is involved in this estimate.

Mr. Fogarty. These things are confusing. We read one thing in the papers, statements made by leaders of our Government, and then

a different set of economic assumptions are presented to us as the justification for appropriations. The two things do not add up. Many people at home get confused after reading these headlines that things are looking up and the depression is about over, and then a week later we have these requests of Congress to appropriate many more millions of dollars to take care of these people who are still unemployed and who you believe will continue to be.

I certainly cannot blame you for that. I believe you are presenting us the facts, and we will act on the facts as they are presented to us.

TREND IN UNEMPLOYMENT

Mr. GOODWIN. I might point out in this connection, Mr. Chairman. that our assumptions do not eliminate the possibility of improvement, As a matter of fact, this chart illustrates it as clearly as anything I can say. This shows, you see, some improvement through the summer.

(The chart referred to appears on facing page.)

Mr. FOGARTY. I also read in your statement that insured unemployment is still 113 percent above that of a year ago.

Then I read in the paper last week what the Secretary of Commerce says and he infers quite strongly everything is straightened out now. The two just do not jibe in my thinking. That is the thing I am talking about.

Insured unemployment is still 113 percent above that of a year ago. How about total unemployed? What is the percentage above a year ago of all unemployed?

Mr. GOODWIN. The May figure would give you a comparable figure.

Mr. DARLING. There was 4.9 million total unemployment in May of this year, and in May of last year it was 2,700,000.

Mr. DARLING. In May it was about 80 percent higher.

Mr. FOGARTY. It would be 80-plus percent over last year, would it not?

Mr. GOODWIN. Yes.

Mr. FOGARTY. So that even though Mr. Weeks and the President and others are saying that everything is fine, unemployment is still running over 80 percent above a year ago?

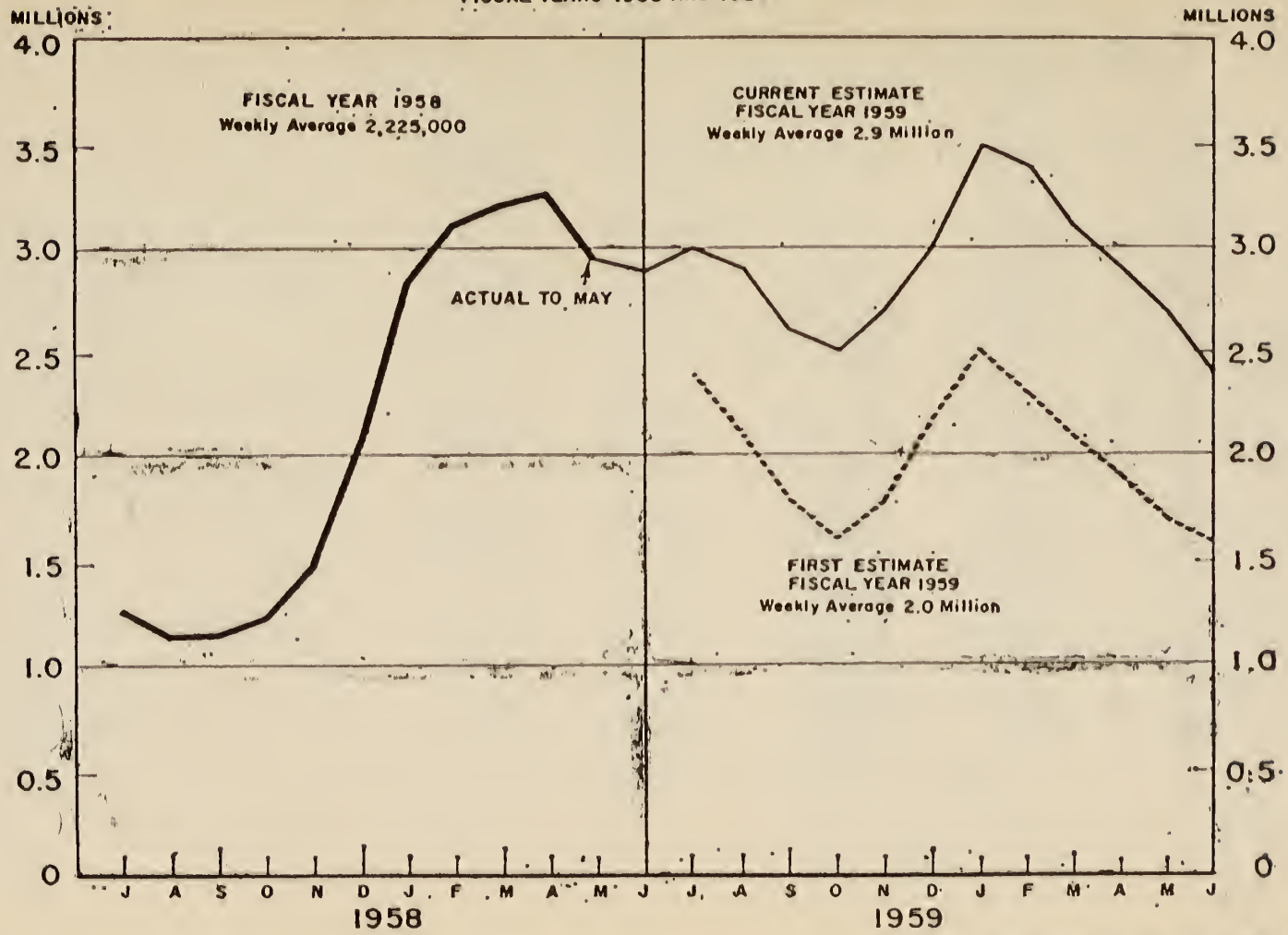
Mr. GOODWIN. The statements I have made are based on improvements starting.

I think on this general point I would like to say this: I think our estimates are consistent with the estimates of the Joint Economic Committee.

As I indicated earlier, our estimates have been accepted by the Bureau of the Budget as being reasonable in terms of what will happen in this next year.

AVERAGE WEEKLY INSURED UNEMPLOYMENT

STATE PROGRAMS ONLY INCLUDING TERRITORIES
FISCAL YEARS 1958 AND 1959



UNITED STATES DEPARTMENT OF LABOR
BUREAU OF EMPLOYMENT SECURITY
OFFICE OF PROGRAM REVIEW AND ANALYSIS
Washington 25, D.C.
5/20/58

1959 ESTIMATED UNEMPLOYMENT COMPARED WITH 1958

Mr. FOGARTY. You expect the insured unemployment to be higher in 1959 than it was in 1958?

Mr. GOODWIN. On the average it will be higher; yes.

Mr. FOGARTY. How much higher?

Mr. GOODWIN. Our estimate for 1959 is 2.9 million and for 1958 our estimate at the present time is 2.225 million.

Mr. FOGARTY. Even the peak would be higher than we will have in 1958 according to this chart. Is that right?

Mr. GOODWIN. Yes.

Mr. FOGARTY. So the average and the peak both will be higher.

DEPARTMENT'S REQUESTS AND APPROPRIATIONS, 1958 AND 1959

Mr. Dodson, will you prepare for the committee, to be inserted in these hearings, what you requested in 1958 for the Department of Labor, including supplementals, for 1958 and for 1959 and also what Congress allowed.

Mr. DODSON. Yes, sir.

You want it by appropriations or by total?

Mr. FOGARTY. By appropriations.

(The information requested follows:)

Appropriation title	1958			1959			
	Request of Bureau of Budget	Request of Congress	Allowed by Congress	Request of Bureau of Budget	Request of Congress	House allowance	Senate allowance
Salaries and expenses, Office of the Secretary	$1,622,880	$1,619,000	$1,480,000	$1,809,800	$1,556,000	$1,478,000	$1,478,000
Working capital fund	150,000	150,000					
Salaries and expenses, Office of the Solicitor	2,698,000	2,628,000	2,321,000	2,407,000	2,321,000	2,321,000	2,321,000
Supplemental				145,000	110,000	(2)	(2)
Salaries and expenses, Bureau of Labor Standards	1,206,055	1,167,000	985,000	1,051,000	1,004,000	995,000	1,004,000
Supplemental				53,000			
Salaries and expenses, Veterans' Bureau, reemployment rights	547,000	542,000	542,000	542,000	542,000	542,000	542,000
Salaries and expenses, Bureau of Apprenticeship and Training	4,055,645	3,940,000	3,600,000	4,000,000	3,900,000	3,600,000	3,700,000
Salaries and expenses, Bureau of Employment Security	6,699,600	6,358,000	5,958,000	6,935,800	6,300,000	6,219,000	6,219,000
Supplemental				995,000	347,000	(2)	(2)
Grants to States, Bureau of Employment Security	281,000,000	270,000,000	259,814,000	344,000,000	329,300,000	305,000,000	305,000,000
Supplemental	33,000,000	33,000,000	33,000,000	26,700,000	10,600,000	(2)	(2)
Unemployment compensation for veterans, Bureau of Employment Security	42,300,000	42,000,000	36,800,000	19,000,000	19,000,000	19,000,000	19,000,000
Supplemental	25,000,000	25,000,000	25,000,000	37,700,000	37,700,000	(2)	(2)
Do	15,000,000	15,000,000	15,000,000				
Unemployment compensation for Federal employees, Bureau of Employment Security	36,700,000	32,000,000	25,000,000	27,800,000	27,800,000	27,800,000	27,800,000
Supplemental	18,400,000	18,400,000	18,400,000	36,300,000	36,300,000	(2)	(2)
Do	11,000,000	11,000,000	11,000,000				
Salaries and expenses, Mexican farm labor, Bureau of Employment security	3,177,900	2,683,000	2,250,000	2,325,000	2,250,000	480,600	2,250,000
Supplemental				275,000			
Salaries and expenses, Bureau of Employee's Compensation	2,889,855	2,885,400	2,885,400	2,858,000	2,858,000	2,858,000	2,858,000
Employee's compensation fund [3]	50,350,000	50,350,000	57,600,000	57,000,000	57,000,000	57,000,000	57,000,000
Salaries and expenses, Bureau of Labor Statistics	8,105,800	7,768,000	7,200,000	8,950,000	7,572,000	7,332,000	7,517,000
Supplemental				475,000			
Salaries and expenses, Women's Bureau	484,100	462,000	462,000	462,000	462,000	462,000	462,000
Salaries and expenses, Wage and Hour Division	11,018,000	10,888,000	10,600,000	10,621,000	10,500,000	10,500,000	10,500,000
Temporary unemployment compensation	665,900,000	665,700,000	665,700,000				
Total, U. S. Department of Labor	1,221,304,835	1,203,540,400	1,185,597,400	592,404,600	557,422,000	445,587,600	447,651,000

[1] Includes appropriated trust funds.
[2] Pending.
[3] Indefinite appropriation.

Salaries and Expenses

Mr. Fogarty. Your 1958 appropriations for "Salaries and expenses" was $5,958,000 and your 1959 budget was $6.3 million. The House and Senate allowance was $6,219,000. The additional appropriation for the temporary unemployment compensation program includes a maximum of $600,000 for salaries and expenses, and the supplemental we have under consideration now is for $347,000.

In the regular 1959 appropriation request the House and Senate both have allowed funds for 36 new positions.

In connection with the temporary unemployment compensation program you have been allowed up to 57 new positions.

Now you are requesting funds to add 46 more positions. Is that correct?

Mr. Goodwin. Yes, Mr. Chairman.

Mr. Fogarty. Because of the change, since the budget was made, in increased unemployment?

Mr. Goodwin. That is right.

Mr. Fogarty. On pages 7 and 8 you mention as one of the items justifying this increase that you have been requested to make technical specialists available to the States to assist them in developing techniques and procedures for improved estimates of total unemployment.

I thought you had told us on other occasions that the estimates of total unemployment are the responsibility of the Census Bureau.

Mr. Goodwin. Nationally, it is. This has to do with assistance given to the States in the way of statewide problems and not the national problem.

Mr. Keenan. Unemployment has gotten larger in some States and State officials are calling upon the employment security agencies to make estimates for them on total unemployment in their States. We are trying to devise techniques for estimating total unemployment using the solid base of insured unemployment which we have.

Mr. Fogarty. They could not get that from the Bureau of the Census?

Mr. Love. They have a small sample of 25,000 or 35,000 for the whole country.

Mr. Dodson. They have no State totals.

Mr. Fogarty. It would seem to me they would have some expertness in making these estimates. Perhaps they ought to be the ones who should be advising the States and lending technical assistance to States in this area.

Mr. Keenan. They have to do door to door canvassing to get national figures. The way the States try to make these estimates is based on the insured unemployment figures which they have not only on an area basis but on a State basis.

The technique is one of expanding the insured unemployment figure up to the total unemployment figure. It involves counting dropouts, people who have gone back to work and people who have exhausted their benefits, and that sort of thing.

Increase for Office of Budget and Management

Mr. Fogarty. There are 6 new positions for the Office of Budget and Management included in the request for the temporary unemploy-

ment compensation program; this is on top of 3 additional positions included in the 1959 regular bill.

In this request you are asking for 16 more?

Mr. GOODWIN. Yes, sir.

Mr. FOGARTY. In what way are the requirements for Budget and Management people going to be so much greater in 1959 than they have been in 1958?

Mr. KEENAN. There are several areas. One is that the impact of this greater unemployment causes stresses and strains on the State agency organizational structures. They have had to expand at a great rate.

As Mr. Goodwin said, they have added slightly more than 11,000 people since last November.

They have called upon us for help in making management surveys of their State agencies.

We have asked for 5 people in this group of 16 to work in that general area.

There is one area that is not entirely related to the increase in unemployment which is in this budget management total figure of 16. We have four professional positions in there to expand our audit function. This comes about because for the first time now we are having to audit State expenditures under the Employment Security Administrative Financing Act of 1954, known as the Reed Act. That has come into play now and a number of State legislatures have appropriated funds and expenditures are being made under Reed Act funds.

It has put a great strain on our audit facilities; also, there are many more accounts now to audit, so we have asked for four auditors in that area.

In another area we are also asking for 5 people out of this total of 16. That is related to the matter Mr. Goodwin mentioned in his testimony, the increase in the number of budget estimates, cost estimates, changes in workload estimates, and in analyzing workload estimates and cost factors insofar as State-grants budgets are concerned.

We expect with this greater unemployment next year there will be many legislative proposals. Most of the legislatures meet in January of next year and we will be called upon for many cost estimates on the benefits side in connection with these legislative proposals. At the same time we expect our budget work will remain very heavy.

Those are the 4 areas which account for the 16 positions which we are asking for in the supplement; they are in different areas from the 3 positions which were approved in the regular request for 1959.

Mr. FOGARTY. Do you think you are asking for enough now?

Mr. KEENAN. Some people in the Bureau do not think we are, sir.

REQUEST TO THE BUREAU OF THE BUDGET

Mr. FOGARTY. What did you ask the Bureau of the Budget for?

Mr. LOVE. We got what we asked the Bureau of the Budget for. They recognize our problem because they see so much of our work.

Mr. KEENAN. That was not true bureauwide but it was in this part of the Bureau.

Mr. FOGARTY. In "Salaries and expenses" did you get everything you asked for?

Mr. KEENAN. No. In the Office of Budget and Management part of it we did.

Mr. FOGARTY. What did you ask for in the way of salaries and expenses?

Mr. DODSON. $995,000.

Mr. FOGARTY. They cut you about 65 percent?

Mr. DODSON. We had a large program in there related to counseling and testing. That was knocked out.

Mr. LOVE. One further point while you are on the Office of Budget and Management. The jobs which we have for the TUC program are entirely different from the jobs that are being requested here. They are for clerical processing, voucher auditing, accounting, and things like that. There is only 1 professional job out of the 6, a grade 9 or 11 budget examiner.

Mr. FOGARTY. By the time this temporary unemployment compensation program expires you will have found a way to use those people.

Mr. GOODWIN. On the contrary, Mr. Chairman——

Mr. DODSON. We will not have the money.

Mr. GOODWIN. What we are doing is hiring them as we indicated to you we would when we were up here justifying the appropriation. We are hiring them from the States, and it is on a reimbursable basis.

Mr. KEENAN. We are trying to get them on a loan basis.

Mr. FOGARTY. It seemed in the past when we have had temporary programs a considerable number of those temporary employees found themselves in permanent positions after the programs ended.

Mr. KEENAN. Some of the individuals did, but it certainly does not reflect in the total employment. Total employment in our Bureau has gone down over these last few years, even though our functions have gone up.

If some of the new temporaries stayed it was only because more of the oldtimers either died or left.

Mr. FOGARTY. You think you will have enough if this request is granted?

Mr. KEENAN. I would like to see us be able to do more in this counseling and testing area, but that is another program.

GRANTS TO STATES

Mr. FOGARTY. Your original request for grants to States was $329,300,000 based on an average insured unemployment of 2 million. Both the House and Senate allowed $305 million. This request is for $10,600,000, which is the amount estimated to be necessary to handle the 900,000 additional insured unemployed now estimated for 1959. Is that right?

Mr. DODSON. Not quite. The $10,600,000 is in addition to our regular estimate of $329,300,000. When the Bureau of the Budget sent this up they stated it as an additional amount for grants to States.

Mr. FOGARTY. But is it not also right that the $329 million was to be used to take care of 2 million unemployed?

Mr. DODSON. That was the original request.

Mr. FOGARTY. Now you have 900,000 more?

Mr. DODSON. That is right.

Mr. FOGARTY. You estimate there will be 2,900,000 unemployed in 1959 instead of 2 million. I assume that additional 900,000 is what the $10,600,000 was for.

Mr. DODSON. The $10,600,000 additional is related to the original estimate that was sent up for $329,300,000 so that it is really $34,900,000 more than the House approved.

Mr. FOGARTY. Is it fair to assume, then, that some of that is to help restore the cut that was made in the House and Senate?

Mr. GOODWIN. No. Over $41 million worth of new workload items are involved in this request.

Mr. FOGARTY. Mr. Dodson, where do you get the figure of $34 million?

Mr. DODSON. The original appropriation request that the administration sent up was for $329,300,000.

Mr. FOGARTY. What did you ask the Bureau of the Budget for?

Mr. DODSON. We asked a total of $356 million.

Mr. FOGARTY. So the Bureau of the Budget cut you almost $30 million?

Mr. LOVE. No.

Mr. DODSON. $356 million was our total estimate that we sent to the Bureau of the Budget.

Mr. FOGARTY. This year?

Mr. DODSON. Yes.

Mr. FOGARTY. In connection with this request that we have before us?

Mr. LOVE. We asked the Bureau of the Budget at this time for $356 million.

Mr. DODSON. $26,700,000 was what we asked the Bureau of the Budget for, but that was to be added to the $329,300,000.

Mr. FOGARTY. How can you add it to the $329 million when you only have $305 million?

Mr. DODSON. From the standpoint of the administration the $305 million had been passed by the House but the Senate had not acted upon it when this budget estimate was being reviewed by the Bureau of the Budget.

SENATE ACTION ON REGULAR BUDGET FOR 1959

Mr. FOGARTY. How much of the House cut did you appeal to the Senate for?

Mr. LOVE. $11,800,000.

Mr. FOGARTY. You went to the Senate and asked them to restore $11,800,000 of the $24 million that was cut?

Mr. LOVE. Yes, sir.

Mr. FOGARTY. On what basis?

Mr. KEENAN. On the basis at that time we did not think the absorption would be as great as was reflected in the House committee report. We admitted there would be some absorption, but we said we could not estimate exactly what it was and we would make an estimate later because we knew we would have to submit a supplemental. We did think the reduction made by the House was greater than would be achievable.

Mr. FOGARTY. What did the Senate say?

Mr. KEENAN. Subsequent to the supplemental by the Bureau of the Budget the Senate acted and accepted the figure of the House.

Mr. DODSON. The Senate report said:

> There was submitted to the Congress on June 9, 1958, a supplemental 1959 estimate for an additional amount of $10,600,000, for a total of $339,900,000, and the Bureau will justify the full amount sought when it testifies on the supplemental estimate. The committee in consequence does not think it necessary to act at this time on the Department's request for partial restoration of the House reduction.

So the Senate has recognized this figure of $339,900,000.

Mr. FOGARTY. That is a nice way of putting it, that they recognized it, but they did not do anything about it.

Mr. GOODWIN. They said in effect they would withhold judgment until we had an opportunity to justify it.

Mr. DODSON. We assume from this language that the Senate is going to reappraise it in total.

Mr. KEENAN. It was a complicated thing to submit because of the change in workload and it seemed to us that it added $10.6 million to the administration's request but $34.9 million to the total approved by the House, so you would have the full picture before you.

Mr. FOGARTY. The only thing we have before us is a request for $10,600,000.

Mr. KEENAN. Based upon our original request of $329,300,000.

Mr. DODSON. The President submitted $10,600,000 additional for grants and the only other amount the President has submitted has been $329,300,000.

Mr. FOGARTY. But the House acted on this appropriation some time ago and the Senate has now acted.

Mr. KEENAN. They had not when we prepared the supplemental.

Mr. FOGARTY. The only request included in the President's message is for $10,600,000. You say that is not the amount you are asking for? What are you asking for?

Mr. DODSON. $34,900,000.

Mr. KEENAN. If you consider the base the amount approved by the House.

Mr. FOGARTY. That is the base.

Mr. LOVE. I think it is important to recognize that this request will pay just about the going rate in the State agencies and their employment at this moment. So unless $339,900,000 is appropriated there will be a reduction in the employment in the States to do more work next year.

BASIS FOR HOUSE ACTION

Mr. FOGARTY. The House report on the regular bill for 1959 stated that the House allowance was based on the assumption that insured unemployment in 1959 would average 2 million per week. That is what you told us at the time you appeared before us.

Mr. GOODWIN. That is right.

Mr. FOGARTY. We said on March 25, 1958:

> This assumption now appears to be quite unrealistic. The committee attempted both during the hearings and through a written request to the Secretary after the hearings, to secure a better estimate on this and other programs in the Department. Inasmuch as the committee has not been able to secure the current estimates, the committee action is based on the same economic assumptions as were used by the Department in the preparation of the request. It thus almost goes without saying that a supplemental request will be necessary and the com-

mittee will give consideration to it using as a base the difference between an average of 2 million of insured unemployment per week and the new estimate.

So we said in our report at the time that we expected a supplemental based on the number of insured unemployment at a more recent date. You said at the time you appeared before us 2 million and now you say 2.9 million per week.

Mr. GOODWIN. Yes.

Mr. FOGARTY. So I assume we should be talking about a request to take care of 900,000 more?

Mr. LOVE. And for that we are requesting $34,900,000 above the House markup.

Mr. FOGARTY. That is not what is before the committee as I read it. As I read it, it is for an additional amount of $10,600,000. That would be in addition to $305 million. There is no disagreement between the House and Senate on that.

Mr. KEENAN. We prepared it on the basis of $10 million more than the $329 million which the administration submitted.

EFFECT OF HOUSE ACTION

Mr. FOGARTY. The bill would provide $24,300,000 less than you requested to provide for 2 million insured unemployment. What effect would that have on your work?

Mr. KEENAN. The time factors have not been reduced very much, but other work has gone by the board. In appeals and other factors there have been great savings and we have realized other overall absorptions, but we get time reports from the State agencies quarterly and workload reports every month and we have them up through May and they indicate the total absorption is not as great as at one time we thought it was going to be this year. It is running at a rate now of about 5.7 percent that is being saved by absorption.

Mr. FOGARTY. If these factors were used in calculating the funds needed to take care of the additional 900,000 insured unemployment, what would it be?

Mr. LOVE. If we used 5.7 percent we would be requesting much more than $339.9 million. We have used a factor of 7½ percent, which would require the States to perform this workload in less time than is being done in 1958. This is a very tight budget.

1958 OBLIGATIONS

Mr. FOGARTY. How much do you estimate the actual obligations for the States' expenses in 1958 will be?

Mr. LOVE. $295,013,000.

Mr. FOGARTY. What was the average insured unemployment handled in 1958?

Mr. KEENAN. 2,225,000.

Mr. FOGARTY. Is that a firm figure by now?

Mr. GOODWIN. Yes.

Mr. KEENAN. Only 1 month was estimated, so it is a pretty firm figure.

Unemployment Compensation for Veterans

Mr. Fogarty. For unemployment compensation for veterans, your original request was $19 million, which was approved by both the House and the Senate, and your supplemental request is for $37,700,000. Your original request was only about one-third of the amount now estimated to be necessary.

Will you bring the table on page 10 up to date to include May 1958 and we will insert that in the record at this point.

(The information follows:)

Unemployment compensation for veterans (benefits), amount of compensation, fiscal years 1957 and 1958 (corrected to June 27, 1958)

	1957	1958	Percent of 1957 period
July	$4,907,203	$4,406,192	89.8
August	5,639,223	4,374,335	77.6
September	4,420,783	3,738,451	84.6
Total, 1st quarter	14,967,209	12,518,978	83.6
October	3,230,534	2,977,129	92.2
November	3,137,844	3,065,989	97.7
December	3,800,758	4,547,057	119.6
Total, 2d quarter	10,169,136	10,590,175	104.1
Total, 1st 6 months	25,136,345	23,109,153	91.9
January	5,545,564	6,915,154	124.7
February	5,513,112	7,441,421	135.0
March	5,889,716	9,315,979	158.2
Total, 3d quarter	16,948,392	23,672,554	139.7
April	5,141,917	9,784,083	190.3
May	4,209,928	8,958,938	212.8
June	3,676,744	----------	----------
Total, 4th quarter	13,028,589	----------	----------
Total, 2d 6 months	29,976,981	----------	----------
Total, 12 months	55,113,326	----------	----------

Unemployment Compensation for Federal Employees

Mr. Fogarty. For unemployment compensation for Federal employees your original request was for $27,800,000. This was approved by both the House and the Senate, and this supplemental request is for $36,300,000. How could you be that far wrong in estimating this item?

Mr. Goodwin. This increase is tied to the economic situation. Although the total separations in Government for fiscal 1959 are estimated to be lower than they were in fiscal 1958, the number of claims we are estimating will be up considerably and the reason for it is that those that become unemployed are expected to have greater difficulty in finding jobs so that a larger percentage of those released from Government employment will file claims under this program.

In addition to that there is an increase in the duration of the benefits. We expect that to be about 11 weeks. The most recent experience has been about 11½ weeks. That compares with 7.8

weeks in the original estimate. We are now expecting that to go up to 11 weeks.

The additional item in increased costs is that the benefits themselves have increased. We are now estimating they will be $30. They have been $28.50.

Mr. FOGARTY. This is just another indication, then, that things will be worse in 1959 than in 1958?

Mr. GOODWIN. For the total year that is true, it will cost more money to operate this program. It will not be any worse in this program than the last 6 months of the fiscal year; it will be about the same.

Mr. FOGARTY. It is about 2½ times worse than it was in 1957 when it only took $26 million to finance this program.

Mr. LOVE. Yes.

Mr. FOGARTY. And that is nothing to laugh at.

Mr. GOODWIN. No, you are right.

Mr. FOGARTY. Please place in the record a table, similar to the one we requested on the UCV program, showing payments to unemployed Federal workers.

(The requested table follows:)

Unemployment compensation for Federal employees (benefits)—Amount of compensation, fiscal years 1957 and 1958 (corrected to June 27, 1958)

	1957	1958	Percent of 1957 period
July	$1,947,628	$2,160,709	110.9
August	2,127,822	2,552,464	120.0
September	1,727,564	2,458,522	142.3
Total 1st quarter	5,803,014	7,171,695	123.6
October	1,756,070	2,819,199	160.5
November	1,793,058	3,205,768	178.8
December	1,852,994	4,524,204	244.2
Total 2d quarter	5,402,122	10,549,171	195.3
Total 1st 6 months	11,205,136	17,720,866	158.1
January	2,557,624	5,663,631	221.4
February	2,448,147	5,989,290	244.6
March	2,749,100	6,256,961	277.6
Total 3d quarter	7,754,871	17,909,882	231.0
April	2,470,585	6,381,226	258.3
May	2,411,791	5,419,160	224.7
June	2,213,363	----------	----------
Total 4th quarter	7,095,739	----------	----------
Total 2d 6 months	14,850,610	----------	----------
Total 12 months	26,055,746	----------	----------

BUREAU OF THE BUDGET ACTION ON REQUESTS

Mr. FOGARTY. What did you ask the Bureau of the Budget for, for grants to States?

Mr. LOVE. When, Mr. Chairman? Currently?

Mr. FOGARTY. Yes.

Mr. LOVI. $356 million.

Mr. FOGARTY. What did they cut out?

Mr. LOVE. Well, they cut the salary rate a little bit; they cut out some increases we had proposed in the counseling and testing program, and they cut some of our tax workloads.

Mr. FOGARTY. What do you mean by tax workloads?

Mr. LOVE. The number of employer tax reports that had to be examined and the number of determinations of coverage under the program.

Mr. FOGARTY. They cut that back because of the unemployment situation?

Mr. LOVE. As unemployment gets higher we have some reduction in that.

The thing I said before about this being a tight budget is demonstrated in what we did here. We took into account the experience of the States as reported to us so far this year, and wherever they had made adjustments we kept them for 1959 pretty much unchanged. There is no leeway in this budget at this time. The adjustments right next to the bone have been made.

Mr. FOGARTY. And what did the Bureau of the Budget say to that? I imagine you told them the same thing?

Mr. LOVE. These were adjustments we made after they reduced the request to $356 million.

Mr. KEENAN. We had to make some adjustments to come to the $339.9 million figure.

Mr. FOGARTY. What did you ask for the Korean veterans and the Federal employees?

Mr. LOVE. We got the full amount of our request for both of those.

FEDERAL EMPLOYMENT

Mr. MARSHALL. Do you have the employment figures for the Federal Government for 1959?

Mr. GOODWIN. We have made some assumptions on that. We have made it, really, from the standpoint of an estimate of the total number of separations.

Mr. MARSHALL. I am afraid that would not give me the figure I was interested in because it has been my impression, in reading some of these employment figures, that the Federal employment rolls of workers have been increasing this year quite materially over last year.

Mr. GOODWIN. There have been some increases, as I understand it. Our estimate on unemployment compensation for Federal workers is based upon fewer separations than we had in 1958.

Mr. MARSHALL. You do not exert any control over the transfer of Federal employees at all?

Mr. GOODWIN. No.

Mr. MARSHALL. You pay out the unemployment claims, but at the same time you have no way that you can govern the transfer of a Federal employee from one agency to another?

Mr. GOODWIN. That is right; we have none. As I indicated a moment ago, our problem on this, and our increased costs, as we estimate them, are to meet other factors. We expect some drop in the number of people that will be separated from the Federal Government, but our increased costs will arise because, of those separated, a considerable number will apply for compensation because there are fewer jobs in the economy and they cannot get work readily. Also,

the amount of the weekly benefits has gone up from $28.50 to an estimated $30. So, our costs are going up, but not because we anticipate there will be more separations from the Federal Government.

Mr. MARSHALL. Do you have any indication of the age of these people that are being separated? Are some of them in the older bracket?

Mr. GOODWIN. I have not seen any figures on that, Mr. Congressman. I have discussed this matter with the people who run this program for us, and here is the story I get on where the claims arise. They come, for the most part, from some of our military installations, and similar activities, and usually in the type of employment that is closest to industrial employment, such as some of the force-account work that is being done in different units of the Government. Some of those close out. They close out the operation in one place and it may be picked up someplace else, but some of the workers do not move when the shift takes place, and they are eligible for benefits. I gather there would not be a disproportionate number in the older age bracket. As a matter of fact, I think there would likely be more in the younger bracket in the type of employment we normally refer to as industrial employment in the Government.

REASONS FOR INCREASE IN BENEFITS WHILE EMPLOYMENT IS INCREASING

Mr. MARSHALL. It is just a little difficult for me to figure out, when the Federal employment has been increasing at the somewhat rapid rate that it has, that, at the same time, our unemployment compensation for Federal employees has gone up so rapidly. Probably some of the impetus of public works has not taken effect as yet, but the workers you are talking about that have been engaged in these military construction projects would be the type of workers that would be absorbed by some of the public works?

Mr. GOODWIN. The construction workers, I think a proportion of them would; yes. In some cases they would have to move to do that, but construction workers usually do move quite a bit, so in that particular group, I would think a large percentage of them would be absorbed.

Mr. MARSHALL. Certainly, the need for stenographic work, by and large, has been on the increase.

Mr. GOODWIN. The sort of thing that happens that throws a load on this program is what happened at the Naval Gun Factory in the District. Some shops were completely closed down and that group of employees is out of work. Most of those people were in classifications that are more industrial than the usual type of Government work, and, of course, opportunities in this area for that type of employment are somewhat limited. When something like that happens, you get a heavy load thrown on the total program.

But I would like to repeat that this increased estimate does not mean there will be an increase in the total separations in government. In fact, we are estimating for 1959 lower total separations than we will have in 1958, but the costs are going up because there will be a larger percentage of those that are out of work who will claim benefits, and benefits are going to cost more.

Mr. Marshall. It has appeared to me that the Federal Government has been a little lax in trying to protect the rights of some of the people that have been advancing in years. It is very difficult for some of those people to find work after they have worked for the Federal Government for a number of years and all at onec they are separated. There are not many employment opportunities for them, especially at times when the unemployment situation is such as it is now.

Mr. Goodwin. That is true.

Mr. Marshall. So, when they become unemployed, it adds to the tax burden of the taxpayer because of their inability to get work.

Mr. Goodwin. Our studies indicate it is more difficult for an older worker who becomes unemployed to get work than a younger worker. The older worker is more apt to stay on the job a longer period of time, but, when he becomes unemployed, once he is laid off, you are right, it is much more difficult for him to get employment.

Temporary Unemployment Compensation Program

Mr. Laird. The items that are requested in this bill for the Bureau of Employment Security are not affected by the temporary unemployment-compensation program, are they?

Mr. Goodwin. I think not.

Mr. Laird. There is no connection between any of the requests covered by these justifications and the temporary unemployment compensation program approved by the Congress?

Mr. Goodwin. No. That is correct.

Mr. Laird. As far as that program is concerned, how is it moving along?

Mr. Goodwin. We now have 17 States that have either come into the Federal program or have set up their own. Four of those 17 have set up their own, including your own State, Mr. Congressman, as you know. The others that have set up their own are Colorado, Connecticut, and Illinois. Those 17 States represent 58.4 percent of the covered workers in the system, so that we now have well over half of the total workers of the country covered by this temporary unemployment compensation program. The indications are that some of the remaining States will come in; just how many, I do not know. In your State, Mr. Marshall, either the legislature is in session or is coming in in a few days. Of course we do not know what they will do, but there are several States where the matter is under active consideration and we are quite certain this 58.4 percent will be increased.

Benefit payments have not actually started, I think, in any State except Connecticut, which set up its own program before the Federal program.

Some of the States will be paying benefits within a few days. As a matter of fact, Pennsylvania will start paying benefits tomorrow, I was told by the Administrator today.

Generally speaking, I think it has gotten underway rather smoothly and I think a good job is being done getting it started.

You might be interested in the States that have come in. They are: Alabama, Arkansas, California, Delaware, District of Columbia, Indiana, Maryland, Michigan, New Jersey, New York, Pennsylvania, Rhode Island, and West Virginia. The States that have set up their

own program under State law completely are Colorado, Connecticut, Illinois, and Wisconsin.

I would like to say one more thing. We certainly appreciated the initiative you took, Mr. Laird, in making that change in the appropriation language. It all happened so fast it did not get done before, but the amendment was extremely helpful to make it clear that administrative expenses for unemployment compensation for Federal workers and Korean veterans would not have to be repaid.

Mr. LAIRD. If we had known of it earlier it would have been put in the committee's bill.

FARM LABOR PROBLEMS

I was home last weekend and I received several complaints that they were having trouble getting farm labor and that certain crops were not going to be fully harvested.

Have you run into any of that type of complaint nationally?

Mr. GOODWIN. I have not heard of it from Wisconsin, Mr. Congressman. We have had some of that type of complaint from some sections of the country. We have been undertaking to get a greater use of domestic workers as compared with foreign workers.

With the unemployment we have had, we felt that was a "must." The whole matter was considered by the Secretary and he instructed us to put emphasis on the recruitment of domestic workers.

Mr. LAIRD. I agree that should be done. Why would anyone have difficulty in filling these farm jobs?

Mr. GOODWIN. Well, there are a lot of people that just do not like to take farm employment, and in some cases there are good reasons for it. In other cases there may not be. But one of the big blocks to getting people to take farm employment is that it requires that they move and requires that they move their families. Farm employment is not only for lower wages but for shorter duration, and it is difficult to recruit industrial workers for farm employment.

Mr. LAIRD. This would not require a move if it were within 10 or 12 miles?

Mr. GOODWIN. Not if it were that close, no.

Mr. LAIRD. Are these jobs actually offered to these industrial unemployed workers through the employment service in the States?

Mr. GOODWIN. Yes.

Mr. LAIRD. It is just a question that they do not like that kind of work?

Mr. GOODWIN. Frequently.

Mr. LAIRD. They do not like the wage rate and the type of work?

Mr. GOODWIN. That is right.

Mr. LAIRD. It would be a higher wage rate, though, would it not, than drawing unemployment compensation?

Mr. GOODWIN. In a good many cases it would. We have seen a number of situations where it would not. Farm wages are quite low in some areas, particularly. In Wisconsin the farm wages would be higher than the benefit amounts, but we have sections of the country where farm wages have been lower than 50 cents an hour and they have resulted in weekly earnings of $15 to $20.

Mr. LAIRD. I can understand why, in such a case, a person would choose to take unemployment-compensation benefits, but I could not believe that was the case at home.

Mr. Goodwin. We will be very glad to look into that. I assume our regional office knows something about it. You have received some complaints, I take it, from some of the growers?

Mr. Laird. Yes. I know farmwork is hard work. It is pretty difficult to convince the grower trying to harvest cherries—this was not cherries, by the way—why he cannot get some imported labor. They are arguing it will mean higher food costs.

Mr. Goodwin. What we are insisting on is that the effort be made to get the domestic workers, but, if they cannot be obtained, then we will make certification of foreign workers. What we have tried to do, is this: We have tried to get cooperation from the growers on a real campaign to recruit domestic workers. We have had situations in the last 6 months where we felt we have not gotten real cooperation because some of the growers have gotten rather used to having their needs taken care of by foreign workers in the last few years, and they have forgotten how to get out and beat the bushes. With the unemployment situation more critical, we have had to insist that a bona fide effort be made to recruit, but, if that does not bring the domestic workers, we will go along with certification of foreign workers.

EFFECT OF REFUSING JOB OFFER ON ELIGIBILITY FOR BENEFITS

Mr. Laird. If an unemployed person is referred to a job and the wage rate is the prevailing rate for the area, would his unemployment benefits cease at that point if he refuses the employment?

Mr. Goodwin. That would be up to the State agency.

Mr. Laird. I understand it is up to the State agency, but is there any State that handles this problem?

Mr. Goodwin. Some of them do.

Mr. Fogarty. Is it not comparable work?

Mr. Keenan. It must be suitable work, under almost all the State laws.

Mr. Goodwin. What they usually do, when a person loses a job, say, in industrial employment, they say he must have a chance to get a job comparable to the one he lost. They will go along with him for a certain length of time to get a comparable job in his community. However, if his unemployment continues and he cannot get just what he had, the States are inclined to say, "Well, you had better take the next best thing," and, as time goes on, they become more and more strict as to the kind of job they insist on his taking.

So what you get, normally, in these situations, you have States going along with them for a matter of some weeks before they get tough in insisting that they take something like farmwork, for instance.

Mr. Laird. I agree they certainly should take care of the domestic workers first. I just wondered if it was going to result in a situation where there would be any food waste.

Mr. Goodwin. Well, we are very conscious of this part of the problem and will do our best to avoid that kind of a situation. We do ask for cooperation on the part of the growers on this point, that they make an effort themselves. If they do it, we will try to go along with them.

Mr. LAIRD. I notice from your estimates of insured unemployment during 1959 that you presented to us today that you expect a higher level of insured unemployment in fiscal 1959 than at any time in fiscal 1958?

Mr. GOODWIN. You mean the peak?

Mr. LAIRD. We have a higher peak and a higher average.

Mr. GOODWIN. That is correct, but the peak in 1958 is higher than the average for 1959.

Mr. LAIRD. I see. But the peak in 1959 is higher than the peak in 1958?

Mr. GOODWIN. Yes.

Mr. LAIRD. Do these 1959 figures include the insured unemployed that would have been exhaustees during fiscal 1958?

Mr. GOODWIN. No.

Mr. LAIRD. It does not include them, even in a State like Wisconsin?

Mr. GOODWIN. No.

Mr. LAIRD. How will you tell, under our program in Wisconsin, whether they would have been exhaustees?

Mr. KEENAN. Are you assuming they become eligible for benefits?

Mr. LAIRD. I am assuming they become eligible for unemployment benefits, say, in February, and I would think that the figures from Wisconsin, if they continued to claim benefit, say, in late October, that that person in 1958 would have been an exhaustee, but under the Wisconsin program he would be drawing regular benefits.

Mr. GOODWIN. My understanding is that the Wisconsin law is similar to the way the other States under the Federal law will operate, or, rather, it operates in the same way. So that entitlement under the Wisconsin law is based upon his having exhausted his regular benefits, and they will be separately reported.

The chart includes nothing at all.

Mr. LAIRD. The figures for 1958 are comparable to the other figures. That is the only part I was interested in.

Mr. GOODWIN. Yes, sir.

Mr. LAIRD. This is certainly a much different picture than we had before.

Mr. LOVE. Yes.

Mr. LAIRD. That is all I have, Mr. Chairman.

Mr. FOGARTY. Have you any further questions, Mr. Marshall?

Mr. MARSHALL. No further questions.

Mr. FOGARTY. Have you any further statement to make?

Mr. GOODWIN. I have not.

Mr. FOGARTY. Thank you very much.

THURSDAY, JUNE 26, 1958.

NATIONAL LABOR RELATIONS BOARD

WITNESSES

BOYD LEEDOM, CHAIRMAN
JEROME D. FENTON, GENERAL COUNSEL
J. NEAL TOMEY, SPECIAL ASSISTANT TO THE GENERAL COUNSEL
CLARENCE S. WRIGHT, BUDGET OFFICER

SALARIES AND EXPENSES

(The following excerpt from House Document 394 is placed in the hearings record in accordance with an earlier order of the subcommittee:)

"NATIONAL LABOR RELATIONS BOARD

"SALARIES AND EXPENSES

"For an additional amount for 'Salaries and expenses,' $1,515,000."

This proposed supplemental appropriation is necessary to enable the National Labor Relations Board to carry out its responsibilities under the Labor-Management Relations Act of 1947, as amended. Cases filed before the Board have increased so sharply that staff, above that requested in the 1959 budget, will be needed to handle this higher level of case activity.

Mr. FOGARTY. The committee will come to order. Judge Leedom, do you have a prepared statement for the committee?

GENERAL STATEMENT

Mr. LEEDOM. I have no prepared statement, but I would like to state the general reasons for the need of a supplemental budget in just a few words. I think, then, that we might sharpen the hearing a bit by answering specific questions you may have.

I think this sums up the situation about as well as it can be done: When we were preparing our original 1959 request for the Budget Bureau to be submitted by them to you, our caseload of complaint-type cases was in round figures 6,000 per year. That represented an alltime high in the history of the Board.

We had a normal intake of about 6,000 unfair labor practice cases in 1954 and 1955 then in fiscal 1956 there was a decline. There had also been, as we were preparing this information for the Budget Bureau, indications of an increase. Therefore, our request to you initially for next year (1959) was based on a larger complaint-type caseload than we had ever experienced, 6,000-plus. Then we indicated when we were here before you in February on the original request that something had happened throughout the country to increase our caseload considerably beyond what we had anticipated a few months earlier. As of the time of our last hearing we testified that we had reason to believe from our experience up until then that the caseload might go to almost 9,000 cases, which would be far above anything we had ever experienced.

Actually, what has happened is the caseload, according to our best calculations for the last 4 months, will actually go above 11,000 cases.

I do not know how to account for this, but that is the fact. It is for this reason that we have to come in for this supplemental request of $1,500,000.

We have to have that money if we are going to even come close to making an effort to maintain the same backlog that we had at the time we made our initial request to you. The fact of the matter is, even if we get the $1,500,000 covered in the supplemental request, we cannot then keep the backlog down to the level we anticipated when we made our intial request.

That is the whole story for the need of this extra money.

I might also point out that this has nothing whatever to do with another problem that confronts us, and that is the question of "no man's land" and the responsibility that rests on the Board to do something about that by reducing its standards. That is another matter. As you know, the Senate has passed a bill that would require us to take all cases.

Mr. DENTON. What do you mean by C cases?

Mr. LEEDOM. Complaint-type cases.

SOURCE OF COMPLAINT CASES

Mr. DENTON. Do most of those complaints come from employers or employees?

Mr. LEEDOM. There are three sources. The companies file against the unions; the unions file against the companies; and individuals file against both unions and companies.

Now then, of those three segments, the greatest source of complaint cases is individuals against both companies and unions.

I have talked about our caseload in terms of the complaint cases because that is the great burden of our workload.

The representation cases, the holding of elections throughout the plants of the country, are not the big part of our work. That is flowing about steady. The representation cases are coming in at a level nothing like the C cases.

COMPLAINT-TYPE CASE INTAKE

We have some charts that show this quite clearly and graphically. I think that each one of you has a copy.

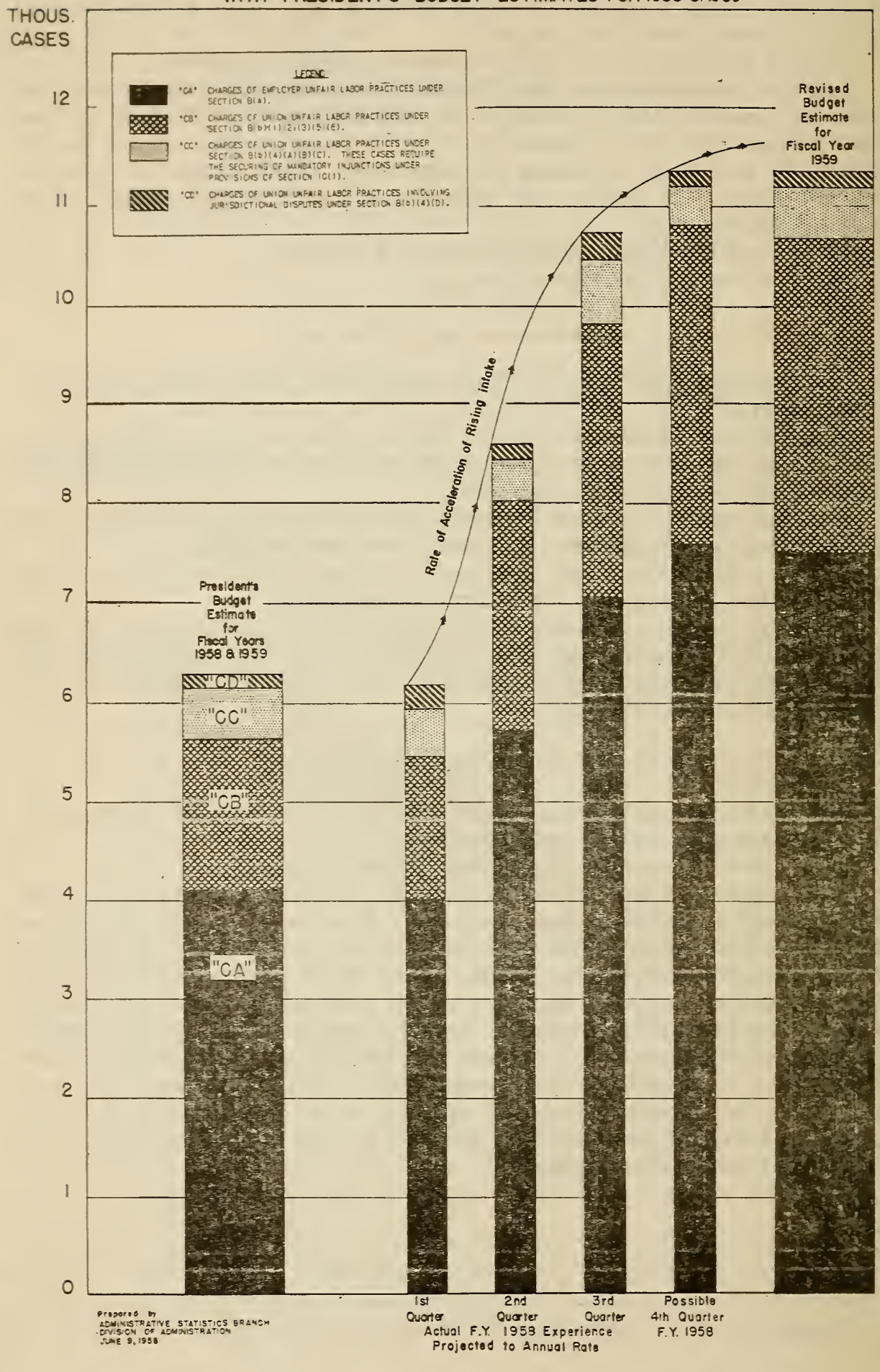
(The chart referred to appears on following page.)

Mr. LEEDOM. The President's recommendation to the Congress was based upon a workload represented by this broad bar at the left of this chart [indicating]. The last four quarters of 1958 are represented by the smaller bars in the middle of the chart [indicating], and they show what has actually happened to our estimated intake represented here in the President's budget. And the graph we have drawn based on this actual experience of the last four quarters actually will go above the bar on the right which represents the case intake we have estimated in the supplemental. It appears to be leveling off, but it is going to level off at something above the case intake on which our supplemental request is geared.

NATIONAL LABOR RELATIONS BOARD

UNFAIR LABOR PRACTICE CASE INTAKE

COMPARISON OF (a) ACTUAL QUARTERLY EXPERIENCE THROUGH MARCH, AND OF (b) TREND OF EXPERIENCE WITH PRESIDENT'S BUDGET ESTIMATES FOR 1958 & 1959



Prepared by
ADMINISTRATIVE STATISTICS BRANCH
DIVISION OF ADMINISTRATION
JUNE 9, 1958

PENDING CASELOAD OF COMPLAINT-TYPE CASES

Mr. LEEDOM. Here [indicating] is another chart which represents our pending caseload.

(The chart referred to appears on following page.)

Here is the previous peak [indicating] of our backlog under Taft-Hartley. This backlog existed at June 30, 1950. Then we had that reduced somewhat and we thought that it was almost manageable by June 30, 1957—that is represented by the second bar. Then the cases started to flow in and the actual pending caseload as of May 31, 1958, went up appreciably, as you can see by the third bar. We had hoped when we made our original request that with the estimated intake we could hold the pending caseload down to the June 30, 1957, level. That is what we sought to do.

(Discussion off the record.)

Mr. LEEDOM. Even if we get the supplemental and handle cases at the same rate with a little improvement that we anticipate making in work production, the pending caseload will go far above anything we have ever had, as you can see by comparing this bar, at the far left of the chart, with this one [indicating] at the far right of the chart. The greatest peak of backlog we ever had in Taft-Hartley time is here [indicating], and here is where it will be even if you give us the supplemental.

That comes about by reason of the fact that our intake of C cases, the hard cases, has doubled. It was 5,000 to 6,000 normally in prior years. The greatest case intake we ever had was 6,000 plus and now it is 11,000 plus. So we are trying to keep the timelag with regard to making our decisions within reasonable bounds, but we will simply have to have more money. That is really the whole story.

Mr. FOGARTY. Mr. Fenton, do you have a statement?

SOURCE OF COMPLAINT-TYPE CASES

Mr. FENTON. I do not have a statement, Mr. Chairman. Congressman Denton asked about the nature of the filings in the complaint case area. Actually, in the third quarter, fiscal year 1958, we had 2,700 C cases of which 1,700 were filed by individuals.

Mr. DENTON. That is caused by the unemployment?

Mr. FENTON. I think that is a large factor. Our history, however, of every economic cycle is that the processing of cases of this sort filed during a critical economic period carries on with us as a work burden long after the period is past.

Mr. FOGARTY. Your appropriation for 1958 was $9,384,800 and your regular budget for 1959 was $9,985,000. The House bill was $9,384,800. The Senate bill was $13,100,000, and the revised request for 1959 is $11,500,000.

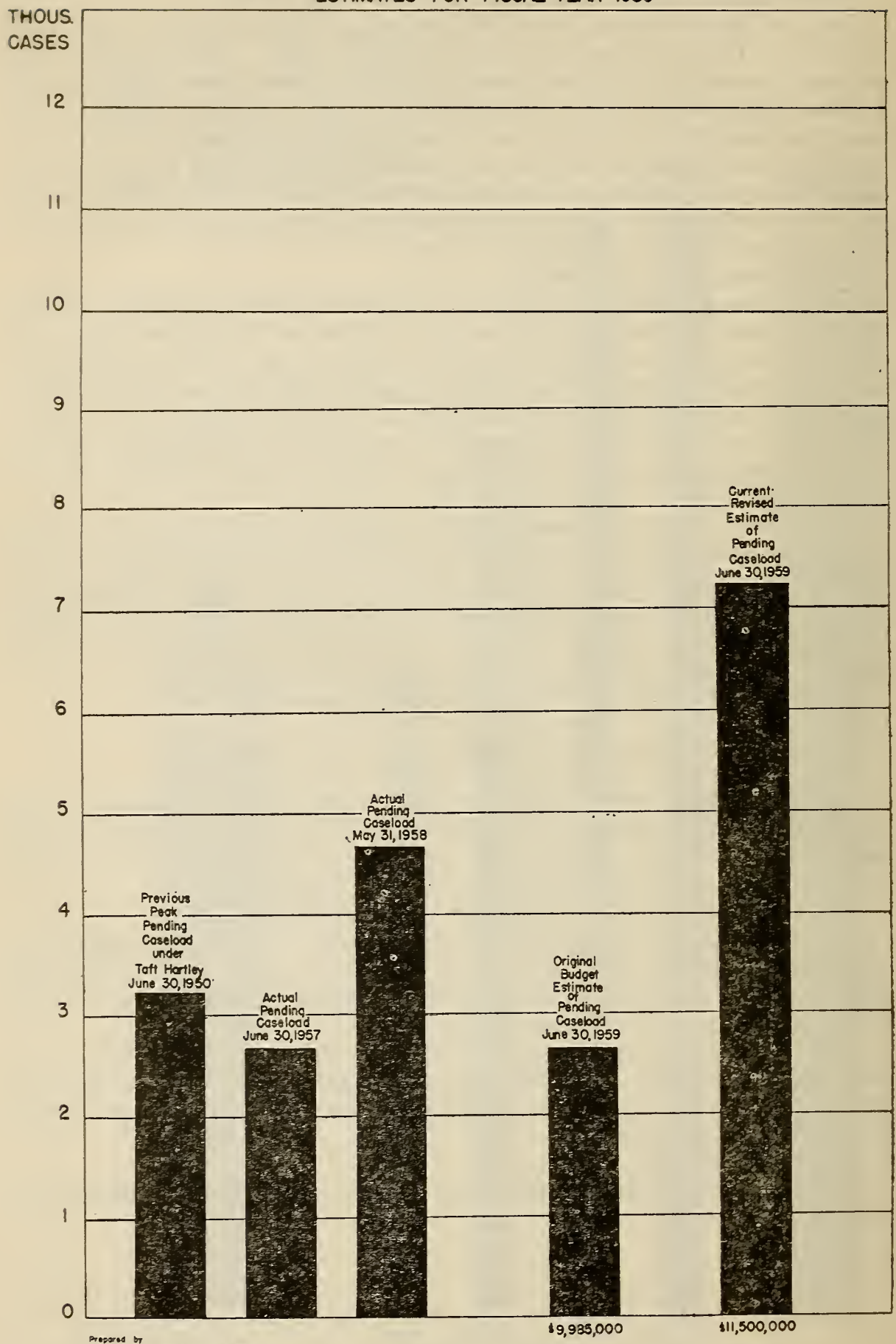
Mr. LEEDOM. Yes.

Mr. FOGARTY. This supplemental makes your revised request for 1959, $11,500,000.

NATIONAL LABOR RELATIONS BOARD

UNFAIR LABOR PRACTICE PENDING CASELOAD

COMPARISON OF PREVIOUS AND CURRENT EXPERIENCE
WITH PRESIDENT'S ORIGINAL AND REVISED BUDGET
ESTIMATES FOR FISCAL YEAR 1959



Prepared by
ADMINISTRATIVE STATISTICS BRANCH
DIVISION OF ADMINISTRATION
JUNE 18, 1958

EXPANSION OF JURISDICTION

Mr. LEEDOM. Yes. I think I should make it clear that the Senate included $1,500,000 to take care of an expansion of our jurisdiction. They did that either on the theory that the legislation that passed the Senate is also going to pass the House—in which case we would be required to take all cases—or on the theory that the Labor Board would reduce its own jurisdictional standards. I might say that one of those two is almost inevitable.

Mr. FOGARTY. What do you think will happen?

Mr. LEEDOM. I doubt if Congress passes the bill. I think the Labor Board will reduce its standards.

Mr. FOGARTY. What will be the effect of that?

Mr. LEEDOM. That would increase our present workload by about 20 percent. It would seem foolhardy for us to increase our workload unless we get substantially more money with which to operate; otherwise, we will be jeopardizing the decisional process in all cases since the timelag would be extended far too long.

As you all know, sometimes any decision handed down promptly is better than one that comes too late.

Mr. FOGARTY. One that comes too late is not worth anything.

Mr. LEEDOM. That is right. That is what confronts us.

Mr. FOGARTY. That is when you get into charges of favoritism.

Mr. LEEDOM. That is right.

SENATE INCREASE

Mr. FOGARTY. The Senate must have been acting on the basis of information regarding the Board's need when they passed the 1959 bill with $1,600,000 more than your budget plus this supplemental request. That apparent discrepancy is because of that change in jurisdiction, I assume.

Mr. LEEDOM. Because of the change. The discrepancy between what the committee did in the Senate and what the House did on your side is quite easily explained, because of this terrific increase in intake. In the short time that elapsed between our appearance before you and our appearance before the Senate the cases went up from our best estimate to you of 9,000 to over 11,000.

Mr. FENTON. I think the Senate, as I understand it, in reaching its particular arithmetic had three components. The first was the restoration of the $600,000 which this committee and the House did not approve in our earlier presentation.

The second component was the supplemental budget of the President, and the third component was the $1,500,000, presumably addressed to an expanded workload. Those three components come out to the final dollar figure.

There may be a discrepancy of about $100,000 between the final figure nominated by the Senate and the three components we addressed ourselves to.

Mr. FOGARTY. I figure there is about $100,000 that is not accounted for.

Mr. FENTON. I cannot account for that discrepancy. I would not know where it comes from.

Mr. LEEDOM. I wonder if Mr. Wright has any knowledge of that.

Mr. WRIGHT. I believe $1,615,000, instead of $1,515,000 in the current supplemental, was caused by the fact that the Senate asked us what we had requested of the Bureau of the Budget last September. We had asked the Bureau of the Budget at that time for $11,600,000, and the Senate put that figure in the bill. This was an increase of $1,615,000 compared to a $1,515,000 supplemental.

Mr. FENTON. Here is the report of the Senate. You will find that they made the $100,000 variation.

Mr. LEEDOM. I think the explanation that Mr. Wright has given is proper. When we were before the Senate committee testifying on the regular budget we were then aware of the need for a supplemental and we submitted figures to them which we had not done when we were before you. When we were before you we were hopeful we would not require a supplemental in spite of the fact that there had been a very sharp increase in the cases. By the time we got before the Senate, we had prepared and submitted a $1,515,000 supplemental. The Senate allowed for the supplemental, notwithstanding we told them that it would be coming here to you to consider as a supplemental. They marked up the bill to that extent.

SITUATION IF NO EXPANSION OF AREA OF JURISDICTION

Mr. FOGARTY. Suppose that the House does not take any action as far as this no-man's land problem is concerned, do you have enough money to operate?

Mr. LEEDOM. There are several factors there. If the House should grant us the supplemental and restore the amount that you deducted from the President's recommendation, we would be confronted with a terrific backlog, more than twice as big as we have ever had, and we would have to give very, very serious consideration to not reducing our jurisdiction standards if that is all of the money we get.

Mr. FOGARTY. Is that the usual procedure, if you do not get the money you limit the scope of your jurisdiction?

Mr. LEEDOM. The budget has been a limitation on the scope of the exercise of our jurisdiction, that is right. We are always in a dilemma. We do not know whether to reduce standards and then ask for money, or to get the money and then reduce the standards. Notwithstanding the dilemma in which we would be if we had only our initial request, including restoration of what this committee took off the original bill, plus this supplemental request, I think that the board would still give serious consideration to reducing the standards.

COST TO EXPAND AREA OF JURISDICTION

Mr. FOGARTY. How much would you need to reduce your jurisdictional standards and cover this so-called no man's land?

Mr. LEEDOM. Well, we would need $1,500,000 to do that.

Mr. FOGARTY. You would need $3 million instead of the $1,500,000 before us.

Mr. LEEDOM. That would enable us to reduce our standards substantially and make a greater invasion into "no man's land." Nobody knows how big "no man's land" is, but we know if we would reduce our standards and we have prepared tentative reductions, we would be moving far into "no man's land." We never requested this $1,500,000 for the purpose of going into "no man's land." It seemed

a little unrealistic for us to come before your committee with this terrific caseload and with the $1,500,000 request to take care of the present caseload.

REQUEST TO BUREAU OF THE BUDGET

Mr. FOGARTY. How was it you only asked the Bureau of the Budget for $1,600,000 instead of the $3 million?

Mr. LEEDOM. Considering the experience we have had on budgets, and that this committee reduced our initial request by $600,000, it did not seem realistic to come in and ask for $3 million more. We thought the realistic thing to do was to ask on the basis of our present caseload. It seems to us that that we should keep the question of extending our jurisdiction more or less isolated from our actual present workload under our present standards.

Mr. FOGARTY. Were you told not to ask for any more money?

Mr. LEEDOM. No, sir.

Mr. FOGARTY. When did you appear before the Bureau of the Budget?

Mr. LEEDOM. Let me ask Mr. Wright to answer that question.

Mr. WRIGHT. We appeared in March of this year.

Mr. FOGARTY. March what?

Mr. WRIGHT. Do you mean the exact date?

Mr. FOGARTY. Yes.

Mr. WRIGHT. I am not sure of the date.

Mr. FOGARTY. Can you get the date?

Mr. WRIGHT. There was no formal hearing. We presented the written request on the 4th of March, and we had a number of informal discussions. There was no formal presentation.

Mr. LEEDON. We can furnish the date that appears on our written request.

Mr. FOGARTY. I am just wondering how you knew the committee had reduced this budget by $600,000 at the time you made this presentation to the Bureau of the Budget, when the committee had not even marked up the bill at that time.

Mr. LEEDOM. I am not sure that I follow you.

Mr. FOGARTY. As I understand it, the presentation was made to the Bureau of the Budget around March 4, and this committee didn't mark up the bill until the latter part of March.

Mr. WRIGHT. I believe we are getting confused. We presented the $1,515,000 request to the Bureau of the Budget on March 4. We did not have the results of our jurisdictional standards committee and the report on estimated effect of the tentative change in jurisdictional standards on caseload and appropriation requirements until, I believe, sometime in April. At that time, it was considered as a proposition to go to the Budget Bureau for the second portion of funds.

Mr. LEEDOM. I do not think that reaches Chairman Fogarty's question. I do not see the relationship here between the time you reduced our initial request $600,000 plus and our presentation the second time. Do you think that our presentation to the Budget Bureau involved——

Mr. FOGARTY. When I asked you the question, "How much did you ask of the Bureau of the Budget?" you said $1,600,000. Then I asked

you how much you thought you needed to do a good job, and you said about double that. Then I asked you why did you not ask the Bureau of the Budget for the larger amount, and you said because at the time you made the presentation to the Bureau of the Budget you were taking into consideration the $600,000 cut that had been made by this committee and other factors, and that you thought it would be best to go along on the basis of your present workload. That is why I then asked you what was the date that you made this presentation to the Bureau of the Budget, and the answer was the 4th of March, but we didn't mark up the bill until the latter part of March.

Mr. LEEDOM. If we actually did not know it at that time, it was not a part of our consideration.

We felt that it was hardly realistic to tack onto that another $1,500,000 for the purpose of increasing our workload, and the question of increasing our workload should, perhaps, be kept separate until we got some indication that the Congress was going to go along with us.

CASE FILINGS, 1958, AND ESTIMATES, 1959

Mr. FOGARTY. The statistics in your justifications show that unfair labor practices cases went from 5,506 in 1957 to 9,450 in 1958, or an increase of about 75 percent. In 1959, you estimate an increase of less than 1,000 case filings over the number for 1958, or an increase of 10 percent.

How is it that you were able to absorb that big increase in 1958 with no supplemental even requested, and you cannot absorb this small increase in 1959 without a very substantial increase in appropriations?

Mr. FENTON. I do not think that we have absorbed the workload. Our backlog is constantly increasing.

1958 SUPPLEMENTAL REQUEST

Mr. FOGARTY. Did you request a supplemental in 1958?

Mr. FENTON. No; we did not.

Mr. FOGARTY. The backlog was increasing all the time, and it has been for many months. Why did you not?

Mr. WRIGHT. We did request a supplemental early in the year.

Mr. FENTON. That is correct. We asked for money, and we were turned down by the Bureau of the Budget.

Mr. FOGARTY. Why did the Bureau of the Budget deny the request?

Mr. FENTON. They did not articulate, as far as I am concerned.

Mr. FOGARTY. They must have articulated to someone.

Mr. WRIGHT. I believe a part of the assumption in turning the request down was, first, as everyone else thought, the caseload that seemed to be rising last August, September, October, and November was going to fall back down shortly. It has never shown any signs of falling down. Instead, it has continued to accelerate upward. At the time the request was submitted, in either September or October of last year, the Bureau of the Budget felt they did not see enough increase in the intake to grant such a request. By the time they would have considered a supplemental request, it would have been well into the last part of the year, too late to get people trained and too late to get some work done in 1958. Therefore, we consolidated

our request of the entire program into a 1959 supplemental request, so that we could have people on for a full year, so that some real work could be accomplished.

PENDING CASELOAD

Mr. FOGARTY. If you get everything that you are asking for now, you estimate the pending caseload as of June 30, 1959, is still going to be much worse than today?

Mr. LEEDOM. Right.

Mr. FOGARTY. What are you going to do about it?

Mr. LEEDOM. Well, we are going to try to improve production to hold the increase down to a minimum.

Mr. FOGARTY. You do not expect to improve production that much?

Mr. LEEDOM. No. It would not be a substantial thing. That is all that we can do; try to improve production, and we have some definite plans.

Mr. FENTON. We are improving production a great deal as it now stands.

Mr. LEEDOM. We are making some progress. When it comes to reducing the estimated pending caseload, even if we get the supplemental, we cannot do a substantial job. The backlog is a little more than double.

Mr. FOGARTY. What do you think should be a reasonable pending caseload?

Mr. LEEDOM. The caseload that appears on the chart there as of June 30, 1957.

Mr. FOGARTY. How much of a backlog is that?

Mr. WRIGHT. 2,680.

TIME REQUIRED TO PROCESS CASES

Mr. FOGARTY. How much lag in time would that be?

Mr. LEEDOM. It takes something over a year to dispose of a C case That is the median. There are exceptions both ways.

Mr. FOGARTY. Is that satisfactory?

Mr. LEEDOM. No; that is not satisfactory.

Mr. FOGARTY. What do you think would be a satisfactory goal to shoot at?

Mr. LEEDOM. Being realistic about it, if we can reach the point where we have a median time lapse on C cases of a year, we would be doing very well.

Mr. FOGARTY. You could not do any better than that?

Mr. LEEDOM. That sounds bad, but I want to point out something here.

Mr. FOGARTY. It sounds bad to me.

Mr. LEEDOM. It does to me, but we are talking now about the contested cases. Our agency handles hundreds, thousands of other cases where there are quick decisions. We are talking of an area of about 12 percent of our intake where we have this timelag, and much of that is not our fault. Much of it is the fault of the litigants.

Now, let me indicate one quick bit of action that the Board gave when the parties wanted quick action. The automobile industry was tied up in bargaining, involving, as you know, hundreds of thousands

of employees here in recent months. The UAW has represented the automobile workers in large units as an industrial union does. Over the years there has been some dissatisfaction growing among the small groups of highly skilled craftsmen within these large industrial units, and some 85 petitions came before the Board right at a crucial moment in the bargaining period. The UAW took the position that we had to decide whether they represented those fellows or a lot of other unions represented them. They said that they had to have some quick action: the other unions said that they wanted to have some quick action; the company said that they wanted some quick action. We disposed of 85 cases in a remarkably short time, in a matter of weeks, because all the parties wanted a quick decision.

Now, when the parties do not want a quick decision, which happens very often on one side or the other, as you all know, it is not hard to delay any legal proceeding. So we are continually fighting the purposeful efforts to delay on the part of one side or the other.

Mr. FOGARTY. And you think that is the best you can do?

Mr. LEEDOM. Well, if money were not a factor and we could hire an unlimited number of lawyers, we could reduce it below a year, but that is not going to happen.

Mr. FOGARTY. How much could you reduce it with the addition of so many lawyers?

Mr. LEEDOM. Well, there is a certain absolute limit, you know. I have really never added up the amounts of time involved for the various steps taken. If we were in a position to have someone get right on the case the moment it arrived, and allow a minimum time for the process of making up our minds, 6 months, I would say, would be pretty near the absolute minimum for contested cases on the average.

Mr. FOGARTY. How many additional employees would be needed to get into that position?

Mr. LEEDOM. We would have to double the staff. I am just guessing in making this estimate, and doubling the staff would involve something less than doubling the appropriation. Our great expenditures are for personal services.

Mr. FOGARTY. What part of the staff?

Mr. LEEDOM. The professional staff, the lawyers.

Mr. FOGARTY. Under the General Counsel?

Mr. LEEDOM. And on the Board side too. We have some professionals who are not lawyers—field examiners.

Mr. FENTON. Under our presentation on the General Counsel's side, we are looking for 90 more professional people. If we get those people I think that our unfair labor practice case production will go up substantially in terms of closing out the complaint cases.

Let me give you some suggestion here. In the current year, 1958, in the complaint case area, here is a tabulation that will show you that by reason of a strong effort centrally and in the regional offices we are getting more work out. In July we closed 535 cases; in August, 477; in September, 461; in October, 571; and in the month of November, 475. In December, 537; January, 605; February, 676; March, 654; April, 700; and in May, 800.

Now, if we can get on the General Counsel's side the 90 people provided for in our request here, I think that we can boost our closing of complaints up to at least 900 a month, which gets pretty close to the projected intake.

Mr. FOGARTY. To get your case handling on a 6 months' basis, you would have to practically double the staff and double the appropriations?

Mr. LEEDOM. We are sort of in fairyland on this part of our discussion because we have never thought the money was available to talk in terms of cutting the time in half or doubling our professional staff. So my figures are pretty rough.

Mr. FOGARTY. I might refresh your memory a bit concerning the matters of money made available for this activity. Under the old Wagner Act prior to the enactment of Taft-Hartley law, in 1947, this committee generally cut the requests for the enforcement of the act down considerably every year. They were also cut on the floor. I was on this committee the first year the Taft-Hartley Act was passed and either late in 1947 or 1948 when the first full request was made the committee said that we would give them everything that they asked for to make sure that the intent of the law was carried out and that the backers of the law—and I did not happen to be one, as you no doubt know—said that they wanted to make sure that the people in the unions were protected as well as the employers, so we gave them everything they asked for to carry out as expeditiously as possible the Taft-Hartley Act.

This committee from that time on gave the National Labor Relations Board practically everything that it asked for, but then when the bill would get to the House floor, those who were responsible for the enactment of the Taft-Hartley Act began offering amendments to cut this appropriation and they carried in the House by a substantial margin. So that in a nutshell is the history of the appropriations.

APPROPRIATIONS REQUIRED TO ADEQUATELY ADMINISTER THE ACT

I have always been in the position of having voted against the Taft-Hartley law and of getting up in the House and defending the appropriations to enforce it. I am in the same position today. I think that you should get sufficient funds to do a good job. The only thing that I am concerned about is your being fair to all sides. If you need more money to do a better job to make sure you are being fair to everybody and to take care of these C cases. I think that you should be in here asking for more funds to do that. I think that a better job can be done if you have the money and the personnel to do it.

Mr. LEEDOM. There is this thing which you already know—it is impossible for us to move suddenly from an operation such as we have to one twice as large. We could not hire the people fast enough. That is one limitation. We would have to build gradually toward this substantial reduction that we are talking about. We would like to do that, but the same reason that prompted us to not ask for this other $1,500,000 is reflected in what I am talking about—we cannot move suddenly from here to here. We did anticipate and now feel that we could utilize the amount of our supplemental request, plus another $1,500,000 which the Senate saw fit to put in to take care of a reduction of our jurisdictional studies, and we feel that we can utilize that well the first year. If we find we are still not doing a thorough job in "no-man's land" conceivably we would then ask for more money next year.

Mr. FENTON. I, of course, am not unmindful of the fact that sometimes political complexions may affect how people vote on the floor of the House. My own feeling is that so long as the laws are on the books, orderly government dictates that an agency do the best job it can and that the agency should be provided with the funds to do it. With 80 cents of every dollar we get going for people, it does not take a great deal to look and to figure out that our problem is a lack of people. When we hire people we try to hire capable people. We urge upon them the importance of impartiality. I would no more want to hire a man who was prejudiced in favor of management than one prejudiced in favor of labor. I think our responsibility transcends any personal convictions. I think the caliber of people we have and those we want to get are going to be guided by considerations of fairness. If the statute has certain repercussions that are unpleasant to any one segment of our society, I do not think that has any fiscal significance. I think that is essentially a legislative problem. I feel rather badly that our fiscal affairs would ever be muddied up by one's own particular view of a particular statute. I think that our job is to execute a statute. I think the executive branch, through the Bureau of the Budget, and the Congress through its appropriations activity, has with us a joint responsibility. I think if we have adequate funds and we fail in the job you have every reason in the world to call us to task for that kind of failure.

I can only hasten to add that legislation will not cure our problem. Our problem is people and people cost money and we do not have money. That is really the core of our problem. I would strongly recommend we get this budget approved. I am hopeful we can show you even by quarterly reports, which I am perfectly willing to give you, our great progress in terms of case handling. I am convinced that if we get the funds our record of performance will be gratifying to you as well as to us. I am so sure of that that I will stake my reputation on it.

ADEQUACY OF REQUEST

Mr. FOGARTY. Are you satisfied with the amount being requested now?

Mr. FENTON. No; I do not think it is enough.

Mr. FOGARTY. What do you think you should be asking for?

Mr. FENTON. I think with the present sustained intake of over a thousand cases a month that the amount of money we are asking for will not enable us to keep current.

Mr. FOGARTY. What do you think you need to keep current?

Mr. FENTON. I think the problem of keeping current first requires that we get current. In order to get current we have to hire and train people and that is going to take a long uphill climb. I do not look for much relief from that problem for another 9 to 12 months.

Mr. FOGARTY. How much do you think you need to keep current?

Mr. FENTON. Once we get current?

Mr. FOGARTY. Once you get current, or whatever way you want to put it. I have asked the question three times now and you have not answered. You have beaten all around the bush. I am trying to get a dollar figure from you as to how much you need. You say that you are not asking for enough money and I asked, how much do you think you should ask for.

Mr. FENTON. I think what we are asking for now is not enough to do the job, but I can only suggest that the last 2 or 3 fiscal years have been such that we have never been properly staffed. Now until we fill that gap of a continual failure to properly staff, it is pretty difficult to say that a certain dollar figure would make us current. I think, to put it briefly, if we get the funds that we are now asking for and we staff accordingly, that probably the continuation of the next fiscal year of the kind of money that we are seeking this year will bring us up to a current situation with a little backlog.

Mr. FOGARTY. That is not good enough as far as I am concerned. You are still beating around the bush. I am not a lawyer, but I know you still have not given me an answer. You have said three times this is not enough money, but you refuse to tell me about how much should be appropriated.

Mr. FENTON. Let us suppose that you gave us another $1 million other than what we are asking for. We would still have to go and hire qualitative people.

Mr. FOGARTY. Those are your problems. I am asking you how much money you need to get the job done. It is up to you to get the job done if you get the money. We do not do the job for you. Our job is to appropriate the funds. It is your problem, then, to hire the personnel; it is not ours.

Mr. FENTON. I understand that. But in order to see where we are going we have to see where we have been. Where we have been, as I look back upon it, antedating my time and including my time, there has been a constant effort on the part of the agency to get a certain sum of money each year in recent years. The Bureau of the Budget takes a bite out of it, the Congress takes a bite out of it, and nobody has ever been able to staff properly in this agency for several years.

Mr. FOGARTY. This is all beside the point. What I am trying to get from you now is how much you need in the fiscal year 1959 to do a good job, better than you are doing now to get the backlog down.

Mr. FENTON. The present dollars will enable us to do a better job than we are doing now.

Mr. FOGARTY. That is still not answering my question. How much do you think it will take to do the job that you think ought to be done and we think ought to be done? How much more money do you need?

Mr. FENTON. The point that I am trying to make is, just to have the money in our pocket that we cannot use is of no moment.

Mr. FOGARTY. I do not think this committee is going to give you any money that you say you cannot use, but we might give some consideration to additional funds if you say they could be used to do a better job and get this caseload down.

Mr. FENTON. I say to you that if you give us the funds that we ask for we will produce more closed cases than at any time in our history. That still does not let us control the volume that comes in. There is no way that you can control that. It is going to take some time to get all the people that we need. If we have to open up new offices, it takes time to do that. Those are all things that nobody can sit here and project in terms of the exact dollars and the exact minute. Nobody can do that.

Mr. FOGARTY. You projected something when you prepared the request for $1,500,000 that is here in front of us.

Mr. FENTON. Yes; and the record will show that money will be utilized for more people in the regions and in the headquarters level.

Mr. FOGARTY. It still will not do the job that you think should be done.

Mr. FENTON. The average has been——

Mr. FOGARTY. I am not talking about averages of past years. We are trying to get an answer from you as to how you think a better job can be done and how much money you need to do it. It seems to me if I were on that side of the table and in a position of dealing with this problem as you are, I would have some definite ideas of what I needed by this time. I would want to tell a committee of Congress just what I needed to do a good job.

Mr. FENTON. I can say flatly, and I will say flatly, that I do not think that the fiscal history of this agency, either at the Bureau of the Budget level or the congressional level, is one that anybody can be very proud of.

I think——

Mr. FOGARTY. The history I gave you, Mr. Fenton, was the history of the appropriations since this law came into effect. I sat here on this committee when the law was first passed and have every year since it was passed.

Mr. FENTON. I understand that.

Mr. FOGARTY. Right after the Taft-Hartley Act was passed the Board was given every dime they asked for because we wanted to be sure the law was administered as equitably as possible. That is why this committee gave every dime that the Board proposed.

Mr. FENTON. I understand that.

Mr. FOGARTY. Then the people in the House who were responsible for the enactment of this law began hacking away at it. This committee did not.

Mr. FENTON. In terms of net result what I say still holds, and that is that the combination of the paring of the request at the Bureau of the Budget level and the congressional level has put us in a position, as an agency, where we are so deep in the hole in terms of case handling that until we get up to a reasonable current case figure it is pretty hard to project with mathematical certainty the exact number of dollars we need to get up to par.

Mr. FOGARTY. You are giving us a lot of words here this morning and not giving us a direct answer.

If you talk that way to the Bureau of the Budget they will still hack away at you. That is my opinion.

You are not the only agency in Government which has backlogs.

Mr. FENTON. I understand that, sir.

Mr. FOGARTY. There are other agencies that have backlogs, and they are doing something about getting funds to take care of them.

Mr. FENTON. I do not suggest we are not, not for a single minute.

Mr. FOGARTY. That is in spite of the Bureau of the Budget?

Mr. FENTON. I suggest our production level is the highest in history. That is the best you can say about anything. Our people are working harder and getting better results.

Mr. FOGARTY. I don't care whether it is the highest in history. It is not good enough.

Mr. FENTON. It is not good enough for me, either.

Mr. FOGARTY. Let us get it better. How much money do you need to get it in better shape? That is what I am asking you.

Mr. FENTON. Is it fair to suggest, Mr. Fogarty, if we ask, as we have, for something over $2 million that the mere fact that $3 million will do it better does not render invalid our request for $2 million plus? Is not 90 percent down the road better than zero percent down the road? I suggest it is.

Mr. FOGARTY. It is if you are bargaining like that, of course.

Mr. FENTON. I am not bargaining.

Mr. FOGARTY. Perhaps that is a good bargaining position but if I were in your position I would not bargain but I would tell this committee what I thought was needed to do a good job.

Mr. FENTON. That is not hard to do if you want my individual viewpoint. I will give it to you.

Mr. FOGARTY. Certainly.

Mr. FENTON. I say this agency probably needs a minimum of $12 million every year for the next 4 years to keep abreast of things.

That is my opinion.

Mr. FOGARTY. That is the kind of an answer I was trying to get from you 15 minutes ago.

Mr. FENTON. Not from me. You didn't ask it 15 minutes ago.

Mr. FOGARTY. Twenty minutes ago, then.

Mr. FENTON. I have been a proponent of this attitude in Government: If we are going to have sensible government every agency has to do its job fully and properly.

In order to do that you have to get Executive approval of some reasonable dollar figure to achieve that mission.

Having gotten a good figure, I think then it is up to us to persuade the Congress that it is a valid figure if we are to do our job.

We have been over here and instead of batting big-league baseball we have been down in the minor leagues.

Mr. FOGARTY. You are being left out in the cold. Because of that philosophy you are not getting as much as you should.

Other agencies in Government are getting their share and you are not because of that kind of a philosophy.

Mr. FENTON. What kind of philosophy is that?

Mr. FOGARTY. The expression you just made that when a decision is made by someone else that there is only so much money to go around, you live by it, come what may.

Mr. FENTON. I don't live by it. I am the most unhappy man in Government about this.

Mr. FOGARTY. Other agencies of Government come in and tell us the whole truth about what they think should be done, when we ask them specific questions.

Mr. FENTON. I tell you, sir——

Mr. FOGARTY. Then it is up to the Congress and not the Bureau of the Budget to decide how much money will be appropriated. That is our responsibility, not yours or the President's or the Bureau of the Budget?

Do I make myself plain?

Mr. FENTON. I think you do and I appreciate that.

Mr. FOGARTY. We have so acted in this committee.

Mr. FENTON. I appreciate that, also.

Mr. FOGARTY. That is why I know that the National Labor Relations Board has not been doing as well as other agencies of Government, because others have not had the same philosophy that you did.

Here is the ceiling we are allowed to operate under. We can do nothing about it. That is your philosophy.

Something can be done about it and has been done about situations like this in other agencies.

Mr. FENTON. Inasmuch as this is an open and frank discussion——

Mr. FOGARTY. Surely.

Mr. FENTON (continuing). And since I happen to be the present incumbent in the General Counsel's Office I do not want to leave on this record any suggestion that I have been either supine or happy about our budgetary problem either at the executive level or the congressional level.

I have urged and fought and bled and pleaded for higher budgets for this agency since I have been here. I will keep on with that same approach that we have to have the money to do the job in a sensible American way, and I will keep on urging that as a minimum of good government.

I am not a supine person when it comes to seeing a job done sloppily. I am not interested one bit in being a party to anything that is not done right.

I suggest to you, sir, that we cannot come over here and do any more than support the appropriation offered us.

When you ask us questions as you have today, and I tell you we ought to have $12 million every year, I mean exactly that.

Mr. FOGARTY. When you are asked a question by a congressional committee you are supposed to answer it to the best of your professional ability.

Mr. FENTON. That is what you are getting, sir.

Mr. FOGARTY. That is what I was trying to get earlier.

How does that compare with the request that is before us for 1959? What is the full request?

Mr. FENTON. $11,500,000.

Mr. FOGARTY. That is an increase of $500,000, bringing it up to $12 million.

Mr. LEEDOM. I would like to say that is not enough. This is an area that is strictly the Board area. It has to do with the reduction of our jurisdictional standards, and I think the proper figure for is to do a good job and a better job and get everything we can use in this fiscal year is the Senate figure. That amount is $13 million plus.

Mr. FOGARTY. $13.1 million.

Mr. LEEDOM. Yes. The General Counsel geared his statement to $12 million on our present standards.

Mr. FENTON. That is without regard to jurisdictional standards.

Mr. LEEDOM. That is right. I do not know the proprieties of our asking for money in excess of any official request before you.

Mr. FOGARTY. I can tell you what the propriety is. You are up here to justify the President's budget, and only that, unless you are asked by members of the committee to give your opinion regarding its adequacy.

Then when you are asked by members of the committee the propriety is that you answer to the best of your ability and give us a good honest——

Mr. LEEDOM. Didn't you ask——

Mr. FOGARTY. I did. I asked you 2 or 3 times and General Counsel 4 or 5 times. You are perfectly safe.

Mr. LEEDOM. We should have the amount of our supplemental request; we should have the million and a half dollars that will enable us to move into "no man's land." We can use no more than that this year according to our best judgment.

Even with that we will not be doing the kind of job you want done; we will not be satisfied with the job ourselves; but it will be all the money we can spend in a year toward that goal.

FUND REQUIREMENTS FOR SUBSEQUENT YEARS

Mr. FOGARTY. How much increase do you think you will need the following year to do a good job?

Mr. LEEDOM. My best judgment now is that the same appropriation the following year, $13 million-plus will do the job, handle the increased caseload we will have by reason of a reduction of our jurisdictional standards.

Now, then, if we can show you that we have done a good job with the $13 million this year, and can come in and show that another million dollars will enable us to shorten the timelag on processing cases, and we see we can utilize the extra million dollars, get the help and the like, then we should come in next year and ask for $14 million.

TIME GOAL FOR HANDLING COMPLAINT CASES

Mr. FOGARTY. Tell us what you think a proper goal should be for handling C cases.

Mr. LEEDOM. I wonder if you would let me ask Mr. Wright if he has ever made a study of the possible absolute minimum?

Mr. WRIGHT. Several years ago we did make such a study. We did not think at that time that we could reduce elapsed time on contested cases much below 9 months allowing for the normal party delays and the normal delays under administrative procedures which must be followed.

Mr. FOGARTY. How long do you think it would take to get it down to 9 months?

Mr. LEEDOM. Three years.

Mr. FOGARTY. Would it take that long?

Mr. LEEDOM. I am afraid it would take that long.

It is something over a year now. Actually it is something over 400 days. I cannot give you the exact figure. It is easily ascertainable.

Mr. FOGARTY. Mr. Denton?

STEPS IN DISPOSING OF A COMPLAINT CASE

Mr. DENTON. If you get a complaint coming in what steps do you take before you finally dispose of it?

Mr. FENTON. The case is investigated in the regional office where it is filed. That often involves going out away from headquarters of the regional office and interviewing people, getting the full picture

from all of the parties involved, and then if the complaint is justified it is issued, and if not it is dismissed.

Mr. DENTON. I know it is hard to answer because some cases take longer than others, but about how long should it take to make that investigation? Can you give me an average time?

Mr. FENTON. For the fiscal year 1957 it took about 90 days, on a median basis.

Mr. DENTON. Then what do you do?

Mr. FENTON. Issue a complaint.

Mr. DENTON. How much notice is given the defendant in that case?

Mr. FENTON. There are prescribed periods. The average time from complaint to hearing is 45 days.

Mr. DENTON. What are the steps you take between the complaint and the hearing? Does the defendant file an answer?

Mr. FENTON. Often he does. Both sides prepare their witnesses. The examiner sets a date and place for hearing, and the parties give testimony and frequently file briefs with the examiner. He issues his report. They can file exceptions to that, and then it goes to the Board.

Mr. DENTON. You have no other pleadings besides the complaint, generally?

Mr. FENTON. That generally is true.

Mr. DENTON. Ninety days for the investigation and 90 days for the hearing. Then what steps do you take?

Mr. FENTON. It is 90 days and 45 days.

Mr. DENTON. All right. Then what is the next step?

Mr. FENTON. Then the trial examiner examines the records and briefs and sits down and writes a carefully worked out report which is then served on the parties. That is called the intermediate report of the examiner.

Mr. DENTON. Then what takes place? First about how long will it take for him to write that report? Some judges are slow and some fast.

Mr. FENTON. Average time on that is about 69 days.

Mr. DENTON. Then what do you do?

Mr. FENTON. At that point the parties can file exceptions to the examiner's report, and they usually do. That then puts the case to the Board as a five-man body to adjudicate.

Mr. DENTON. About how long will it take to dispose of that?

Mr. FENTON. That varies. I think at the present time the average number is about 190 days.

Mr. DENTON. That is a pretty long time.

Mr. FENTON. Here is the kind of thing that frequently happens. The parties, after the examiner's report comes out, have a certain minimum time within which to file exceptions. They frequently get that extended in order to give them additional time to file.

Then they may ask for oral arguments or they may ask for the right to file briefs. Therefore by the time the Board actually gets the case a lot of time has elapsed which is within the control of the parties.

Mr. DENTON. About how long before the Board gets it?

Mr. FENTON. In general it takes about 190 days between the report and the time the Board gets it.

Mr. DENTON. Then about how long a delay is there in the Board's decision?

Mr. FENTON. I was including the Board's decision in the 190-day figure.

Mr. DENTON. That gives you about 9 months, does it, if everything went off perfectly?

Mr. FENTON. It comes out to about 400 days.

Mr. DENTON. That is over a year, then.

Mr. FENTON. That is right.

Mr. DENTON. I feel as the chairman does. I would like to see you have enough money to do the work you should do.

STAGES WHERE DELAYS CURRENTLY OCCUR

Where in this process do you find most of the delay?

Mr. FENTON. Some of the delays are perfectly normal.

Mr. DENTON. That is not what I meant. In what stage of this proceeding do you find most of this delay? Is it during investigation?

Mr. LEEDOM. There is a 5 months' delay at the Board level before we can pick up the next case. Cases are stacked up so we do not get at them on the average for a period of 5 months.

Mr. DENTON. That is what I am trying to get at. What is the delay in the investigation period?

Mr. FENTON. There is none that I know of.

Mr. DENTON. What is the reason for the initial delay?

Mr. FENTON. Lack of people.

Mr. DENTON. How far back are you in your investigations? If a report comes in how long before you get to the investigation?

Mr. FENTON. We have no investigative level. That is within a matter of days. We investigate these cases promptly.

Mr. DENTON. There is no delay in the investigations stage?

Mr. FENTON. No, sir.

Mr. DENTON. The delay is primarily in the Board's getting the case?

Mr. FENTON. There is delay before the Board gets it, as I have just outlined.

Mr. DENTON. Is that delay caused by lack of money, because of counsel and other things?

Mr. FENTON. It is a combination of factors. We must not ever lose sight of a very important fact—any judicial process, and the Board's activity is essentially a judicial process, has requisites for notice to the parties, time, and all that sort of thing. That is inherent in the jurisprudence system.

Mr. DENTON. I will come to that in just a minute.

Mr. FENTON. Cases are investigated promptly.

Let me give you examples of where more funds would expedite even that level.

Mr. DENTON. All right.

Mr. FENTON. If we have some cases, for example, in the Dakotas, North and South Dakota, we have to send an investigator out there.

This would involve an investigation from the Minneapolis office. We cannot send him out all the way to South Dakota for one case. There are too many other things he ought to be doing around Minneapolis, so we wait until we have 2 or 3 cases and then send him out because we haven't the manpower or the money to send him out and get him back for that 1 isolated case. There is a lot of that.

You take matters like the waterfront-type matters, where every time there is a Donnybrook on the waterfront there are a number of competing parties, unions, shippers, and everybody else. When our man goes to the waterfront it takes him days to get stories from all of the people, where if you could send 3 or 4 men we would get it that much quicker. That problem is inherent in the process and lack of manpower.

We can accelerate this investigative process; we can accelerate handling with more people.

Mr. DENTON. I am like the chairman on this matter again. I have always thought you ought to have sufficient money to enforce the act.

I know this law has a great deal more regulation to it than the Wagner Act did, being much more complicated and because you enter into more regulation and because you get more complaints it takes more money, more time, and all that.

However, we have tried to give you adequate appropriations and people friendly with the Taft-Hartley law, which I am not, come up and want to cut you down.

Even this year we got a letter from the chamber of commerce protesting very vigorously——

Mr. FENTON. I know nothing about that.

Mr. DENTON. Evidently it had some weight with this committee. The chamber of commerce protested your appropriation in particular.

These are people who should be your friends in that sort of thing, and I think should want to see this law enforced just as anybody else.

Mr. FENTON. I was glad to see Mr. Meany and Mr. Hays come out publicly for more appropriations.

Mr. DENTON. I have had many complaints from labor organization people because of delays. That is another thing you have brought out.

It is not only money that causes delays but other things cause delays.

FIELD ORGANIZATION

One thing you spoke about is prevalent in my State, and that is a delay between Indianapolis and Cincinnati. The regional office is in Cincinnati but there is an intermediate office in Indianapolis.

There is a duplication there to some extent. It always has been felt that if you had one regional office in Indiana and they did not have to go to two offices a great deal of time would be saved there.

I would think the Dakotas situation could be taken care of in the same way.

Do you think you could set up your organization so you could avoid these intermediate agencies and eliminate that delay there?

Mr. FENTON. There is no doubt about the fact that where a State has a regional office the cases originating in that State are handled faster. There is no question about that.

It happens that all 48 States would like a regional office. We cannot in the nature of things, even if we had the funds, give them all an office.

Mr. DENTON. Here is a State as large as Indiana, but you have to go to Indianapolis and then run over to Cincinnati. I think you would be better off to go directly to Cincinnati than going to Indianapolis, though I suspect they would rather have Indianapolis there.

It seems that setup causes a great deal of delay.

Mr. FENTON. They dispose of many cases at the Indianapolis level without going to Cincinnati.

Mr. DENTON. If you do not take jurisdiction.

Mr. FENTON. I speak of where our investigative people and our examiners and attorneys will encourage the parties to settle right there without going through Cincinnati.

PURPOSEFUL DELAYS

Mr. DENTON. Here is another complaint. We have a delay caused by lawyers. In that respect we have a new type of lawyer growing up who is a labor lawyer and generally represents management.

He knows all the tricks of the trade and his great stock in trade is to delay these proceedings.

We have a lot of complaint about the way they continue to delay these proceedings on the theory that to delay justice is justice denied.

You can stop that practice. If the trial examiner let those lawyers know such practice is not pleasing to the examiner they would not continue that for very long.

I think a great deal can be done by the Board to stop that type of tactic.

What do you think about that?

Mr. LEEDOM. We recognize this is an area where we can bring about improvement, and we work at it. We are seeking to work more closely with the reputable groups of lawyers to change our rules where necessary in order to avoid this unnecessary delay.

Furthermore, we have made public statements that were very critical of the type of practice that you have mentioned.

Mr. DENTON. We used to have the strikebreakers, now we have lawyers doing that. It is being abused pretty badly.

Mr. LEEDOM. As you know, it is not confined to the one side. It is practiced by both sides.

Mr. DENTON. Practically all of the complaints I hear of are as to delays caused by the management side. I also know what you say is true.

I was sitting in a lawyer's office who handles many of these cases, and an employee came in complaining against an employer.

He said "There is no use of your trying to do that under the NLRB. There is no use for an employee to go there."

I realize under the Wagner Act they would have thought this was a position unfair to the Board. I know in this kind of case you will be accused anyway you go. I appreciate that.

I have heard a good deal of complaint that the Board sees primarily the management point of view. I have heard that complaint a good deal.

Mr. LEEDOM. That is said, but we are belabored by the management side, also. One spokesman for a segment of management wrote a book saying the present Labor Board is repealing the Taft-Hartley Act with respect to all the provisions that were designed to protect management's rights. I think it is a fair statement that perhaps the union's side is more critical of us than management's side, but we still get a lot of complaints from the management's side.

CASE PRIORITIES

Mr. DENTON. In which cases do you have to give the employer complaint preference over the other? Is that in C cases? The employers' complaints gets preference over the employees' complaints?

Mr. LEEDOM. That is not in any one case.

Mr. DENTON. There is one type of case where you give preference to the employer.

Mr. LEEDOM. We are required to give secondary boycott cases priority treatment. The statute requires that.

Mr. DENTON. What else is there? There is another case where the employer case gets preference.

Mr. LEEDOM. I am not aware of it.

Mr. DENTON. I do not remember it now.

Mr. LEEDOM. As a matter of fact, we actually give some preference to any election case. We speed up the election cases.

Mr. DENTON. I have heard a lot of complaints on delays in those election cases.

Mr. LEEDOM. Our record there is pretty good.

Mr. DENTON. At one time the Federal court got way behind in their docket.

Mr. LEEDOM. Yes.

Mr. DENTON. When I was on the Judiciary Committee. Mr. Chandler was the administrative officer for the Federal courts. They took steps to expedite hearings in the Federal courts and did a wonderful job.

That was done by the administrator of the Federal courts.

I think the same thing could be done with your agency.

There were statistics drawn up about delays.

Mr. LEEDOM. That is right.

Mr. DENTON. When they found a judge was delaying too long they decided he had to step it up.

As a lawyer, I know that is one of the most exasperating things about practicing law, having a slow judge.

Some judges just cannot decide. They cannot make a decision. Something should be done administratively to make a record of that.

Mr. LEEDOM. Last week we took a step in that direction with respect to our trial examiners.

We anticipate there will be a more comprehensive——

Mr. DENTON. A man should not decide it too hurriedly, but some people just can't seem to decide at times.

That is all.

ANALYSIS OF WORKLOAD STATISTICS

Mr. MARSHALL. On page 5 of these justifications, you show that your average number of cases filed was 13,955.

Over on page 8 you show that your annual cases closed were 14,020. In other words, you closed more cases than the number filed.

Mr. LEEDOM. There is not a complete matching of those two figures. The year in which we made the great closings we had a backlog with which to operate. That accounts for that.

Mr. MARSHALL. Is that for the period 1949 through 1957 or from the period starting at the very beginning?

Mr. LEEDOM. 1948 through 1957.

Mr. MARSHALL. So part of this would be because there was a backlog carried on from this period before.

Mr. WRIGHT. That is right.

Mr. MARSHALL. Do you have cases withdrawn, also, where you do not require action?

Mr. WRIGHT. Yes: requiring no formal action.

Mr. MARSHALL. If those cases are withdrawn they still show up as cases filed?

Mr. LEEDOM. If a charge is filed.

Mr. MARSHALL. And if they are withdrawn do you show them as closed or do you just drop them?

Mr. LEEDOM. We show them as cases closed.

Mr. MARSHALL. Even though it did not require administrative work on your part?

Mr. LEEDOM. Yes, sir——

Mr. FENTON. They probably required investigation and perhaps an extensive one.

Mr. LEEDOM. There would be administrative work prior to the withdrawal and that may have prompted the withdrawal.

Mr. MARSHALL. On page 8 of the justification you show your estimate as to the number of cases that you expect to close; are those figures based upon the anticipation of getting this supplemental appropriation or was it based upon your old figures?

Mr. WRIGHT. Based upon getting the supplemental.

Mr. MARSHALL. When you keep track of these figures, are you carrying any cases in your records which have been filed and yet there is no action apparently taken?

Mr. FENTON. No, sir.

Mr. MARSHALL. You have nothing like that?

Mr. FENTON. No, sir.

Mr. MARSHALL. You are following the same process of handling these applications that you have carried over the years? You have not altered your administrative procedures. As a case is filed you carry on about the same administrative procedures in closing that case as you have for a number of years?

Mr. FENTON. With one variation. Some of our offices would listen to an individual who came in to complain, and they might conduct a preliminary investigation and decide the case had no merit and then advise the charging party and that would not be recorded.

Now we record that.

What happened was this: In a couple of those instances the man came back in 6 months and actually sought to file the charge only to find out the 6 months' limitation had run out on him and we could not process his case under the law.

To avoid that kind of problem all the offices now handle it alike.

If a man complains they take his complaint, investigate it, and then dismiss it if it proves to be without merit.

Mr. FOGARTY. Mr. Cederberg?

Mr. CEDERBERG. I have no questions, but I want to say I think your goal of 9 months so far as these cases are concerned is good but unrealistic. I do not expect to live long enough to see that goal achieved, regardless of the amount of money put into the budget, because of other factors that enter into these proceedings.

Mr. LEEDOM. It would be a kind of idealistic goal we might never reach. You are right, sir.

Mr. FOGARTY. Thank you very much, gentlemen.

THURSDAY, JUNE 26, 1958.

DEPARTMENT OF HEALTH, EDUCATION, AND WELFARE

PUBLIC HEALTH SERVICE

SALARIES AND EXPENSES, HOSPITAL CONSTRUCTION SERVICES

WITNESSES

DR. VANE M. HOGE, CHIEF, DIVISION OF HOSPITAL AND MEDICAL FACILITIES
ACCOMPANIED BY:
DR. JAMES V. LOWRY, CHIEF, BUREAU OF MEDICAL SERVICES
ROY L. HARLOW, CHIEF FINANCE OFFICER
ROBERT W. BROWN, ACTING DEPARTMENT BUDGET OFFICER

(The following excerpt from H. Doc. No. 394 is placed in the hearings record in accordance with an earlier order of the subcommittee:)

"SALARIES AND EXPENSES, HOSPITAL CONSTRUCTION SERVICES

"For an additional amount for 'Salaries and expenses, hospital construction services', $150,000."

On March 14, 1958, the President transmitted to Congress an amendment to the 1959 budget (H. Doc. 354) which increased the estimate for "Grants for hospital construction" by $46,200,000. The additional $150,000 requested herein is for the cost of administration related thereto.

Mr. FOGARTY. We will take up "Salaries and expenses, Hospital Construction Services."

Do you have a prepared statement, Dr. Hoge?

Dr. HOGE. I have a brief prepared statement.

(The statement referred to follows:)

STATEMENT BY CHIEF, DIVISION OF HOSPITAL AND MEDICAL FACILITIES, PUBLIC HEALTH SERVICE, ON 1959 SUPPLEMENTAL FOR SALARIES AND EXPENSES, HOSPITAL CONSTRUCTION SERVICES

APPROPRIATION ESTIMATE

Mr. Chairman and members of the committee, for the current fiscal year 1958, $121,200,000 was appropriated for the construction and research grant programs and $1,450,000 for salaries and expenses. The original 1959 budget submission for the Hill-Burton program requested grant funds in the amount of $75 million, and $1,300,000 for salaries and expenses. Although the 1959 estimate for hospital construction and research was later increased to $121,200,000 (the 1958 level), no corresponding increase was included for salaries and expenses. The supplemental budget request now being considered by your committee would increase the salaries and expense appropriation for administration of the Hill-Burton program by $150,000, thus retaining the level of funds appropriated for fiscal year 1958.

SCOPE OF PROGRAM

Three major changes in the hospital and medical facilities survey and construction legislation have taken place since its enactment in 1946. First, the authorization for the construction of hospitals, public health centers, and related facilities was increased to $150 million per year; secondly, an annual authorization of $60 million was established for the construction of chronic disease hospitals, diagnostic or treatment centers, rehabilitation facilities, and nursing homes; and thirdly, the Surgeon General was authorized to conduct and make grants for research, experiments, and demonstrations relating to the effective development and utilization of hospital services, facilities, and resources.

EXPLANATION OF NEED

In addition to providing technical guidance and consultation to States regarding the development of State plans, annual construction programs, and standards of design and construction, staff must also be available to review and approve project applications, including detailed architectural plans and specifications, inspect projects and certify Federal payments, and maintain surveillance over bid and award procedures and the payment of minimum wage rates.

The operation of the Hill-Burton program requires a large number of specialized and highly technical skills related to the planning, design, and construction of all types of hospital and medical facilities. For the most part these employees are in the professions of medicine, nursing, hospital administration, architecture, engineering, and equipment consultation. Employees in these professional categories are minimal in number, have been recruited gradually over a long period of years, and have become highly skilled in their respective specialties.

Continuance of this professional and technical staff at the 1958 level is essential if the Federal Government is to maintain its role of national leadership in the planning, design, and construction of hospitals, and other medical facilities.

SENATE ACTION

The Senate approved $211,200,000 for construction grants and research activities, the amount authorized to be appropriated under the Hill-Burton legislation. The Senate also approved $1,650,000 for salaries and expenses which is an increase of $200,000 over the Department's original request of $1,300,000 and the $150,000 supplemental now being considered by your committee.

Mr. FOGARTY. Tell us briefly what this is about. It is my understanding that the Senate has put additional money for the activity into the regular bill. Is that correct?

Dr. HOGE. Yes, sir.

Mr. FOGARTY. Tell us the reasons for this.

Dr. HOGE. The original presentation for the construction budget was $75 million. The salaries and expenses money had been reduced accordingly under the current year's appropriation.

However, when the additional estimate was sent up here to maintain the current level of $121 million, the salaries and expenses estimate was not sent up at the same time.

Mr. FOGARTY. Why?

Dr. HOGE. I do not know why except as I recall the Budget Bureau said they would send it up as a supplemental at a later date.

As I understand it, that is the reason why this is a supplemental.

Mr. FOGARTY. This $150,000 is just to take care of the $46 million increase in the budget for construction?

Dr. HOGE. To bring us up to the current level.

Mr. FOGARTY. Bringing it up to a total of $121 million.

Dr. HOGE. That is right.

Mr. FOGARTY. Thank you very much, gentlemen.

THURSDAY, JUNE 26, 1958.

COMMISSIONED OFFICERS' PAY INCREASES—PUBLIC LAW 85–422

WITNESSES

ROY L. HARLOW, CHIEF FINANCE OFFICER
ROBERT W. BROWN, ACTING DEPARTMENT BUDGET OFFICER

(The following excerpt from H. Doc. 394 is placed in the hearings record in accordance with an earlier order of the subcommittee:)

"MILITARY PAY INCREASES

"For additional amounts for appropriations to the Public Health Service, as follows:

" 'Assistance to States, general', $156,000;
" 'Grants and special studies, Territory of Alaska', $10,000;
" 'Control of venereal diseases', $27,000;
" 'Control of tuberculosis', $34,000;
" 'Communicable disease activities', $133,000;
" 'Sanitary engineering activities', $181,000;
" 'Salaries and expenses, hospital construction services', $33,000;
" 'Hospitals and medical care', $724,000;
" 'Foreign quarantine activities', $59,000;
" 'Indian health activities', $248,000;
" 'General research and services, National Institutes of Health', $24,000;
" 'National Cancer Institute', $137,000;
" 'Mental health activities', $91,000;
" 'National Heart Institute', $108,000;
" 'Dental health activities', $66,000;
" 'Arthritis and metabolic disease activities', $76,000;
" 'Allergy and infectious disease activities', $96,000;
" 'Neurology and blindness activities', $33,000; and
" 'Salaries and expenses', $34,000."

The foregoing proposed supplemental appropriations are needed to provide for the cost of military pay increases for commissioned officers of the Public Health Service in fiscal year 1959 as authorized by Public Law 85–422, approved May 20, 1958.

Mr. FOGARTY. Mr. Harlow, we will be glad to hear your statement regarding the military pay increases.

Mr. HARLOW. Mr. Chairman and members of the committee, Public Law 85–422, approved May 20, 1958, provides increased basic pay rates for members of the uniformed services, including the commissioned corps of the Public Health Service. Since estimates for fiscal year 1959 were submitted to Congress prior to enactment of Public Law 85–422, no provision was made for the increased costs authorized therein. For all direct appropriations, the net increase amounts to $2,270,000.

The attached table indicates, by appropriation, the number of officers involved and the additional funds required. The amounts were determined by applying the new basic pay rates to the number and grade distribution of commissioned officers included in the 1959 budget. Approval of these proposed supplemental appropriations is respectfully requested.

(The table referred to follows:)

Public Health Service—Additional appropriation requirements for 1959 under Public Law 85–422

Appropriation title	Number of positions	Additional amount required
Assistance to States, general	153	$156,000
Grants and special studies, Territory of Alaska	15	10,000
Control of venereal diseases	45	27,000
Control of tuberculosis	39	34,000
Communicable disease activities	229	133,000
Sanitary engineering activities	300	181,000
Salaries and expenses, hospital construction services	22	33,000
Hospitals and medical care	1,128	724,000
Foreign quarantine activities	52	59,000
Indian health activities	343	248,000
General research and services, National Institutes of Health	33	24,000
National Cancer Institute	165	137,000
Mental-health activities	112	91,000
National Heart Institute	147	108,000
Dental-health activities	66	66,000
Arthritis and metabolic disease activities	85	76,000
Allergy and infectious disease activities	90	96,000
Neurology and blindness activities	39	33,000
Salaries and expenses	32	34,000
Total	[1] 3,095	2,270,000

[1] In addition, 174 positions are financed through the National Institutes of Health management fund by reimbursement from the accounts to which services are rendered.

Mr. FOGARTY. You are requesting $2,270,000. Is that right?

Mr. HARLOW. Yes, sir.

Mr. FOGARTY. Is that 1 percent of the appropriations involved?

Mr. HARLOW. That, Mr. Chairman, is pretty close to 12 percent of the amount to be spent for pay and allowances of commissioned officer out of all appropriations.

Mr. FOGARTY. As I understand it, it is less than 1 percent of the appropriations involved. Is that about right?

Mr. HARLOW. Yes, sir; just about that.

Mr. FOGARTY. This is because of the increase in military pay that Congress passed?

Mr. HARLOW. Yes, sir.

Mr. FOGARTY. That is the reason you are requesting this amount?

Mr. HARLOW. Yes, sir.

Mr. FOGARTY. Is there anything else your would like to add?

Mr. HARLOW. You might be interested, Mr. Chairman, in a table I have here which shows the old and the new rates of pay.

Mr. FOGARTY. Put that in the record.

(The information referred to follows:)

Pay and allowances of officers, Public Health Service [1] effective June 1, 1958

Grade	Cumulative years of service																
	Monthly rate														Rental		Subsistence
	Under 2	Over 2	Over 3	Over 4	Over 6	Over 8	Over 10	Over 12	Over 14	Over 16	Over 18	Over 20	Over 22	Over 26	Over 30	With dependents	Without dependents	
Surgeon General, Deputy Surgeon General, Assistant Surgeon General (major general):																		
New rate	$963.30	$1,000.00	$1,022.00	$1,022.00	$1,022.00	$1,100.00	$1,100.00	$1,150.00	$1,150.00	$1,200.00	$1,250.00	$1,300.00	$1,350.00	$1,350.00	$1,350.00	$171.00	$136.80	$47.88
Old rate	963.30	963.30	1,021.80	1,021.80	1,021.80	1,021.80	1,021.80	1,021.80	1,021.80	1,021.80	1,021.80	1,021.80	1,021.80	1,021.80	1,076.40	171.00	136.80	47.88
Assistant Surgeon General eral (brigadier general):																		
New rate	800.28	860.00	860.00	860.00	900.00	900.00	950.00	950.00	1,000.00	1,100.00	1,175.00	1,175.00	1,175.00	1,175.00	1,175.00	171.00	136.80	47.88
Old rate	800.28	800.28	850.20	850.20	850.20	850.20	850.20	850.20	850.20	850.20	850.20	850.20	850.20	904.80	967.20	171.00	136.80	47.88
Director grade:																		
New rate	592.80	628.00	670.00	670.00	670.00	670.00	670.00	670.00	690.00	800.00	840.00	860.00	910.00	985.00	985.00	136.80	119.70	47.88
Old rate	592.80	592.80	631.80	631.80	631.80	631.80	631.80	631.80	631.80	655.20	717.60	717.60	748.80	780.00	811.20	136.80	119.70	47.88
Senior grade:																		
New rate	474.24	503.00	540.00	540.00	540.00	540.00	560.00	590.00	630.00	680.00	720.00	745.00	775.00	775.00	775.00	136.80	102.60	47.88
Old rate	474.24	474.24	507.00	507.00	507.00	507.00	507.00	530.40	561.60	577.20	608.40	608.40	639.60	670.80	670.80	136.80	102.60	47.88
Fu llgrade:																		
New rate	400.14	424.00	455.00	455.00	465.00	485.00	520.00	550.00	570.00	610.00	630.00	630.00	630.00	630.00	630.00	119.70	94.20	47.88
Old rate	400.14	400.14	429.00	429.00	429.00	452.40	483.60	499.20	514.80	530.40	561.60	561.60	577.20	592.80	592.80	119.70	94.20	47.88
Senior Assistant grade:																		
New rate [2]	326.04	346.00	372.00	415.00	440.00	460.00	480.00	510.00	525.00	525.00	525.00	525.00	525.00	525.00	525.00	102.60	85.50	47.88
Old rate	326.04	326.04	351.00	374.40	405.60	421.20	436.80	452.40	468.00	483.60	499.20	499.20	514.80	514.80	514.80	102.60	85.50	47.88
Assistant grade:																		
New rate [2]	259.36	291.00	360.00	370.00	380.00	380.00	380.00	380.00	380.00	380.00	380.00	380.00	380.00	380.00	380.00	94.20	77.10	47.88
Old rate	259.36	274.18	335.40	335.40	351.00	366.60	382.20	397.80	413.40	413.40	413.40	413.40	413.40	413.40	413.40	94.20	77.10	47.88
Junior assistant grade:																		
New rate [2]	222.30	251.00	314.00	314.00	314.00	314.00	314.00	314.00	314.00	314.00	314.00	314.00	314.00	314.00	314.00	85.50	68.40	47.88
Old rate	222.30	237.12	296.40	296.40	312.00	327.60	343.20	358.80	374.40	374.40	374.40	374.40	374.40	374.40	374.40	85.50	68.40	47.88

[1] Career Compensation Act of 1949, as amended.
[2] Does not apply to commissioned officers who have been credited with over 4 years' active service as an enlisted member (see table below).

Grade	Commissioned officers who have been credited with over 4 years' active service as an enlisted member														
	Over 4	Over 6	Over 8	Over 10	Over 12	Over 14	Over 16	Over 18	Over 20	Over 22	Over 26	Over 30	With dependents	Without dependents	Subsistence
Senior assistant grade:															
New rate	$415.00	$440.00	$460.00	$480.00	$510.00	$535.00	$535.00	$535.00	$535.00	$535.00	$535.00	$535.00	$102.60	$85.50	$47.88
Old rate	374.40	405.60	421.20	436.80	452.40	468.00	483.60	499.20	499.20	514.80	514.80	514.80	102.60	85.50	47.88
Assistant grade:															
New rate	370.00	380.00	395.00	415.00	435.00	450.00	450.00	450.00	450.00	450.00	450.00	450.00	94.20	77.10	47.88
Old rate	335.40	351.00	366.60	382.20	397.80	413.40	413.40	413.40	413.40	413.40	413.40	413.40	94.20	77.10	47.88
Junior assistant grade:															
New rate	314.00	335.00	350.00	365.00	380.00	400.00	400.00	400.00	400.00	400.00	400.00	400.00	85.50	68.40	47.88
Old rate	296.40	312.00	327.60	343.20	358.80	374.40	374.40	374.40	374.40	374.40	374.40	374.40	85.50	68.40	47.88

Additional pay as applicable:
(1) $100 per month incentive pay for veterinarian officers;
(2) For medical and dental officers (excluding medical and dental interns) who have completed active service as a physician or dentist: $100 per month for less than 2 years; $150 over 2; $200 over 6; $250 over 10;
(3) $110 per month leprosy pay;
(4) $110 per month flight pay for nonrew members.

Mr. HARLOW. Other than that I will say we also have had a pay increase for civilian employees which will involve us in additional expenditure out of these 1959 appropriations.

Mr. FOGARTY. Will you absorb that?

Mr. HARLOW. No, sir.

Mr. FOGARTY. Thank you very much, Doctor.

LETTER OF REPRESENTATIVE JOHN L. MCMILLAN OF SOUTH CAROLINA

There is one other matter which Congressman McMillan of South Carolina called to my attention that I had hoped to take up in hearings with the Public Health Service before adjournment, but it doesn't appear that we will have occasion to have before us the divisions that are concerned. However, I am going to place Mr. McMillan's letter in the record and will expect to discuss this matter with the appropriate people when you are back next winter with your budget for fiscal year 1960.

(The correspondence referred to follows:)

HOUSE OF REPRESENTATIVES,
COMMITTEE ON AGRICULTURE,
Washington, D. C., June 7, 1958.

Hon. JOHN E. FOGARTY,
Chairman, Subcommittee on Labor, Health, Education, and Welfare,
House Appropriations Committee, Washington, D. C.

DEAR CONGRESSMAN FOGARTY: I am enclosing a copy of a letter just received from the Secretary of the Department of Health, Education, and Welfare which explains itself.

The lower part of South Carolina where we have thousands of acres of swampland seems to have more mosquitoes than usual this year on account of continuous rain since the first of the year. I am wondering if your committee considers granting funds for purposes of assisting the States in eradicating mosquitoes in malaria-affected areas.

I know that at one time we were sending millions of dollars to South America and some other countries for this purpose, and I am wondering if we could not secure funds under the same program. I would appreciate your having the clerk to your subcommittee check this section of the appropriations bill with a view of securing funds for this purpose in the next supplementary appropriation.

With kindest regards, I am,

Sincerely yours,

JOHN L. MCMILLAN,
Member of Congress.

THE SECRETARY OF HEALTH, EDUCATION, AND WELFARE,
Washington, June 6, 1958.

Hon. JOHN L. MCMILLAN,
House of Representatives,
Washington, D. C.

DEAR MR. MCMILLAN: This is in reply to your letter of May 21, 1958, which enclosed a letter to you from Mr. S. Wattie Guerry, of Kingstree, S. C., concerning a community mosquito problem.

The provision of technical assistance to communities having mosquito problems such as Mr. Guerry describes usually falls within the jurisdiction of the State health department concerned. Therefore, as an initial step in dealing with the problem, it is suggested that Mr. Guerry contact the State health officer of South Carolina.

The Public Health Service of this Department has vector-control consultants who are available to assist State and local health agencies at the request of the State health officer with problems requiring specialized services. In matters related to mosquito control such services may include comprehensive field surveys to locate and define breeding areas, mosquito identification, and recommendations regarding control techniques and program planning. This Department does not

have funds available for direct aid to States or communities for mosquito-control activities.

Insofar as the mosquito problem affects servicemen, Mr. Guerry may want to discuss the situation with the local base commanders.

Mr. Guerry's letter is returned for your convenience in replying.

Sincerely yours,

M. B. Folsom, *Secretary.*

Thursday, June 26, 1958.

St. Elizabeths Hospital

salaries and expenses

LIST OF WITNESSES

DR. WINFRED OVERHOLSER, SUPERINTENDENT

ACCOMPANIED BY

DR. ADDISON M. DUVAL, ASSISTANT SUPERINTENDENT
R. A. WILLIAMS, ASSISTANT BUDGET OFFICER
ROBERT W. BROWN, ACTING DEPARTMENT BUDGET OFFICER

(The following excerpt from H. Doc. No. 394 is placed in the hearings record in accordance with an earlier order of the subcommittee:)

"Saint Elizabeths Hospital

"salaries and expenses

"For an additional amount for 'Salaries and expenses', $32,000."

This proposed supplemental appropriation is to meet the additional cost during fiscal year 1959 of wage-board pay increases granted April 6, 1958.

Mr. Fogarty. Dr. Overholser, you have a small item here.

Dr. Overholser. Yes, sir.

The Federal share of this is $32,000 and the balance of $130,000 would come from the District of Columbia and other reimbursements.

Mr. Fogarty. You have no control over this at all, do you?

Dr. Overholser. No, sir.

Mr. Fogarty. This amounts to $32,000?

Dr. Overholser. Yes, sir.

Mr. Fogarty. Thank you very much. We will place your prepared statement in the record.

(The statement of Dr. Overholser follows:)

Statement by Superintendent of St. Elizabeths Hospital on 1959 Supplemental for Salaries and Expenses, St. Elizabeths Hospital

Mr. Chairman and members of the committee, wage-board hourly rate increases approved and granted on April 6, 1958, to employees serving in prevailing rate system positions will increase the annual operating costs of St. Elizabeths Hospital by an estimated $162,000 over the amounts provided for in the fiscal year 1959 budget.

A supplemental appropriation of $32,000 is requested for salaries and expenses to cover the Federal share of these increases. The remainder of the funds required ($130,000) will be obtained from the District of Columbia and other agencies through reimbursements for patient care rendered.

The hospital cannot absorb the cost of these increases without reducing the present standards of care and treatment of patients.

THURSDAY, JUNE 26, 1958.

SOCIAL SECURITY ADMINISTRATION

BUREAU OF OLD-AGE AND SURVIVORS INSURANCE, LIMITATION ON SALARIES AND EXPENSES

WITNESSES

VICTOR CHRISTGAU, DIRECTOR, BUREAU OF OLD-AGE AND SURVIVORS INSURANCE
ROBERT M. BALL, DEPUTY DIRECTOR, BUREAU OF OLD-AGE AND SURVIVORS INSURANCE
JACK S. FUTTERMAN, EXECUTIVE ASSISTANT
ROY E. TOUCHET, ASSISTANT DIRECTOR
EDWARD J. O'BRIEN, BUDGET OFFICER
CHARLES I. SCHOTTLAND, COMMISSIONER OF SOCIAL SECURITY
JOSEPH E. McELVAIN, CHAIRMAN, APPEALS COUNCIL
ROY L. WYNKOOP, ADMINISTRATIVE OFFICER, SOCIAL SECURITY ADMINISTRATION
ROBERT W. BROWN, ACTING DEPARTMENT BUDGET OFFICER

(The following excerpt from H. Doc. No. 394 is placed in the hearings record in accordance with an earlier order of the subcommittee:)

"SOCIAL SECURITY ADMINISTRATION

"LIMITATION ON SALARIES AND EXPENSES, BUREAU OF OLD-AGE AND SURVIVORS INSURANCE

"The amount authorized by the Departments of Labor, and Health, Education, and Welfare Appropriation Act, 1959, to be expended from the Federal old-age and survivors insurance trust fund for necessary expenses, is increased by $5,831,000: Provided, That persons may be temporarily appointed without regard to the provisions of the Administrative Procedures Act, as amended (5 U. S. C. 1001–1011), to serve as hearing examiners to hold hearings under title II of the Social Security Act, as amended, but such temporary appointments shall terminate not later than December 31, 1959."

The proposed increase in the limitation is primarily due to an estimated additional 200,000 claims above the original budget estimate that must be processed in order to determine the entitlement of individuals to benefits under the old-age and survivors' insurance program. Based on recent workload data, it is now estimated that a total of 2,480,500 claims applications will have to be processed during fiscal year 1959.

The number of hearings and appeals cases expected to be processed has also increased. The existing limitation provides funds for processing approximately 16,000 hearings and appeals. Present estimates place this figure at 25,000. This is the result of an increase in the number of appeals cases received and the necessity for cutting down the backlog of cases by approximately one-half by the end of fiscal year 1959.

Since the backlog of cases pending before the Appeals Council is a temporary situation which is expected to end by December 31, 1959, language is proposed providing for appointment of hearing examiners on a temporary basis.

Mr. FOGARTY. We will take up the request for the Bureau of Old-Age and Survivors Insurance. You may proceed, Mr. Christgau.

Mr. CHRISTGAU. Mr. Chairman and members of the committee, I appreciate this opportunity to appear before you in support of our request for additional funds for fiscal year 1959.

The members of this committee have consistently made known their strong interest in our prompt processing of claims for retirement, survivor, and disability benefits. I am sure, therefore, that you will

be glad to know that with the help of the supplemental funds approved by you for fiscal year 1958, we have been able to make substantial progress in reducing the number of claims awaiting final action before payment.

The $8,690,000 supplemental appropriation, together with the $130 million regular appropriation for 1958, enabled us to cope with very much heavier workloads than we anticipated—in retirement and survivor claims alone about 600,000 additional claims, about a 30 percent increase—and to reduce pending loads and the time claimants must wait for the Bureau to complete action. At the beginning of June 1958 there were 132,000 disability claims in process compared to about 240,000 on July 1, 1957. This reduction of over 100,000 disability claims during this fiscal year is a big step forward in the direction of achieving currency in processing. Notable progress has been made, too, in reducing the number of retirement and survivor claims pending. The much heavier than anticipated workloads received in fiscal year 1958 and particularly the heavy increase which occurred starting January 1, 1958, gave rise to high pending loads. In the district offices alone retirement and survivor claims which were pending reached a peak of 263,000 claims applications the week of February 6. At the beginning of June the number of claims in process in the district offices had been reduced to about 170,000—very close to the amount of claims that would be considered a normal in-process workload.

When we appeared in support of the request for supplemental funds for fiscal year 1958, it was questionable whether we would be able to handle all of the additional workload that the revised estimate indicated we would receive in fiscal year 1958. We testified that it would be likely that we would have to carry over into fiscal year 1959 about 50,000 additional claims which we would not be able to handle in 1958. I am now happy to report we will carry over substantially less than 50,000 excess claims and this notwithstanding the fact that we will receive about 100,000 more claims in 1958 than the supplemental request was based on.

Generally, we will be reducing our backlogs until early fiscal year 1959 when the volume of work on hand will again be about the level that has heretofore been considered normal. In addition, studies are in progress to find ways and means of processing claims even more quickly and some concrete action has already been taken as a result of them. Shortly, we will centralize the payment of disability benefits in Baltimore and this will help to speed up further the processing of disability claims. We expect that a continuing comprehensive study of the overall claims process will produce ideas that will enable additional reductions in the time required to complete the processing of all claims.

As you know, the economic recession was a major factor in our request for supplemental funds in fiscal year 1958. When we appeared before you in February 1958 in support of our regular fiscal year 1959 appropriation request, we discussed the possible effect of the current economic recession on that request. At that time we were not in a position to present a sound estimate of the increased volume of claims that would result from a continuation of the recession into fiscal year 1959.

Based on the assumption that an upturn in the economy will start in late summer of this year and that there will be a slow but steady

improvement during the remainder of fiscal year 1959, we estimate that we will receive a minimum of 200,000 more retirement and survivor claims than were provided for in our regular 1959 appropriation request. If this assumption turns out to be optimistic, we will, of course, receive even more additional claims. However, it is important that we be able to make ready now for handling at least the 200,000 additional claims. The supplemental funds we have requested for fiscal year 1959 will permit us to move now to recruit and train the additional personnel required to handle this higher claims and other work loads for which we are not budgeted in our regular appropriation request.

We are requesting an additional $5.8 million for fiscal year 1959. The recession-related claims in fiscal year 1958 together with 200,000 additional retirement and survivor claims now projected for fiscal year 1959 will increase the estimated number of retirement and survivor beneficiaries on the rolls on June 30, 1959, from the 12.7 million in our regular appropriation request to 13.1 million. The additional funds the Bureau will require to process 200,000 more claims in fiscal year 1959 and to service a larger beneficiary roll account for $4.6 million of the total $5.8 million in supplemental funds requested. The remaining $1.2 million is for handling more hearings in appeals cases by the referees of the Appeals Council. The improvements achieved in the status of disability operations—the reduction of the large pending load and the speeding up of processing of disability cases—will have the effect of increasing very substantially the workload of the referees over that which was budgeted for in fiscal year 1959.

At present 12,250 appeals cases are pending. At the current rate of disposal of cases this pending load amounts roughly to 10 months of work. The number pending plus the higher estimate of the appeals load in 1959 demands a very substantial and immediate stepup in the processing of appeals cases. If we are to handle the higher receipts and reduce the pending workload to even 5 months' receipts by the end of the fiscal year 1959, approximately 25,000 cases must be heard and disposed of in 1959. This would necessitate an increase of 55 percent over the number of hearings budgeted for in our regular appropriation request for 1959. We would, of course, continue all-out efforts in fiscal year 1960 until the appeals load is down to normal levels.

In effect, our peak load is shifting now from the Bureau to the Appeals Council and some of these disputed cases are being given further consideration.

In conclusion, we would like to thank you for the many courtesies you have extended and for the great help you have given us and the program. We assure you that we will continue our efforts to measure up to the highest requirements of the demanding job of administering a program as important as is old-age and survivors insurance.

Mr. FOGARTY. Your request is for $5,831,000.

Mr. CHRISTGAU. Yes, sir.

Mr. FOGARTY. That is in addition to $133,300,000 in the regular appropriation bill for 1959.

Mr. CHRISTGAU. Yes, sir.

Exemption of Hearing Examiners From Administrative Procedure Act

Mr. Fogarty. The controversial item in this request is something you have not touched on, hiring hearing examiners without regard to the Administrative Procedure Act.

Mr. Christgau. That comes directly under the Commissioner's supervision.

Mr. Schottland. I have been very much concerned over our inability under present procedures to keep abreast of this tremendous load even though we have increased our permanent referees from 27 to 85.

I think you are familiar with our appeals procedure, but if a person is dissatisfied with the decision of the Bureau he may appeal. An appeal is necessary before they can take their case to court. They must exhaust their administrative remedy, through appeal, first.

At the present time, from the time they file an appeal until the time the decision is rendered, requires around 9 months. Obviously this is an intolerable situation.

It is due to the tremendous increase in the number of appeals, primarily in the area of disability.

We have increased the permanent referees very substantially, from 27 to 85.

We just see no possibility of getting under this load through the normal procedures of getting referees from the regular registers.

In the first place it takes us 6 to 8 months to train these people. This is a very complicated program, as you know.

We are not asking that we be permitted to appoint persons permanently outside of the Administrative Procedures Act. All we are asking is that persons with legal training, now thoroughly familiar with our program in the Bureau of Old-Age and Survivors Insurance be borrowed for a temporary period, because it looks as if by the end of fiscal 1960 we will need only 100 referees as compared with 135 for the next year and a half.

We think it would be bad business to invest tremendous amounts of time and not reduce this load promptly because of the necessity of taking on persons not familiar with our program, and then at the end of 1960 release 35 of them.

That is our problem. We estimate that for the fiscal year 1959 we will enter the fiscal year with 14,000 requests, and receive an additional 18,000 new cases.

We struggled with this in every possible way, and as you can see increasing our personnel from 27 to 85 has indicated our desire to work through the normal channels of the Administrative Procedures Act.

All we are asking is this temporary relief so we can get over this hump because it is becoming a serious operating and public relations problem.

Objection of American Bar Association

Mr. Fogarty. As you know a member of the American Bar Association appeared before our committee yesterday. Two statements have been filed in addition to the personal appearance. They were down-to-earth statements. There is no question about their opposition to this procedure for which you are asking authority.

In the first place, it is legislation on an appropriation which is subject to a point of order.

I was wondering if you had cleared this with the proper legislative committee to see whether or not it meets with their approval?

Mr. CHRISTGAU. We can go back and discuss it with the Ways and Means Committee. So far as I know we have not officially discussed it with them.

I think the reason for bringing it up in the supplemental is because of the urgency of the matter.

Mr. FOGARTY. We all agree it is urgent and something has to be done. It is, as you say, an intolerable situation to have people waiting 8 to 10 months for their appeal to be acted on. Those people who are appealing certainly are in need or they would not be going through all the bother of appealing. A way has to be worked out to accomplish this.

I think they suggested that the Federal Communications Commission had a similar problem a few years ago and they worked it out within the framework of the law with the Civil Service Commission.

Their major complaint was that it did not seem right for persons who are administering this law to merely move over into another office and sit as a judge and jury. They would not be quite as independent as others who were employed in accordance with the Administrative Procedure Act.

Mr. SCHOTTLAND. If I might comment on that, Mr. Chairman: In the first place, all these decisions are subject to review by the Appeals Council, which Mr. McElvain heads, so they could get the same kind of independent review.

Mr. FOGARTY. How much more time does that take?

Mr. SCHOTTLAND. That is not a difficult or time-consuming operation.

The problem with the objection of the bar association is that they cannot offer any solution.

POSSIBLE ALTERNATIVE

Mr. FOGARTY. They offered, as a preferable alternative, the solution tried by the FCC. They had a big flood of applications for TV stations a few years ago and they put on some examiners on a temporary basis. That was approved by the Civil Service Commission.

Mr. SCHOTTLAND. That was a temporary basis of getting trained persons.

If we had people thoroughly trained in this we would be perfectly willing to make such appointments.

However, to recruit lawyers on a temporary basis would be difficult. We don't believe they would accept appointments on a temporary basis.

Then to spend 6 months training them and not getting the benefit of sustained effort, it seems to us to be a terrific waste of funds.

Mr. FOGARTY. Let me read you a portion of what was said:

> That problem was met by the Federal Communications Commission obtaining authority, in cooperation with the Civil Service Commission, to appoint section 11, Administrative Procedure Act, trial examiners for a temporary period.
>
> That program worked quite well. The Civil Service Commission cooperated and they got good examiners and took care of the backlog reasonably well, and the Commission's problems at the trial examiner level, at least, have not been criticized very much. I think that the Civil Service Commission has permitted agencies to resort to what we call selective certification. In other words, the

Federal Communications Commission would tell the Civil Service Commission, "We have a person we would like to appoint as an Administrative Procedure Act. examiner. Will you examine him and determine his qualifications If you find him qualified to appoint on a register where he can be appointed, then we can appoint him by that process."

That is what was suggested yesterday by the American Bar Association in opposition to this procedure you are asking for.

Mr. McElvain. The Federal Communications Commission was able to find on their registers persons who had had experience in communications work, engineering work, or some other line, a person qualified basically to meet the hearing examiner qualifications and who had the additional experience for which Communications was looking.

There is no one, or very few persons, on the registers who have had, in addition to meeting qualifications for hearing examiner, experience in the disability field.

Mr. Denton. They pass on the disability question. Is there anything more they have to pass on? It is much easier to find lawyers to handle this work than Communications cases unless there is more to it than that.

Mr. McElvain. When we think of the background of social security and the whole program, not only disability but the other features, also, of the social-security program, I point out there are few, if any, on the register who have had that training.

Mr. Denton. It is not as complicated as the work of the Federal Communications Commission.

Mr. Schottland. What you say may be correct, but it does not help us if these lawyers are not on the register.

Mr. Fogarty. The FCC worked out some kind of program with the Civil Service Commission, they both cooperated, and hearing examiners were hired with a minimum of delay. They were temporarily appointed, and it worked out all right according to the representative of the American Bar Association yesterday.

Mr. Wynkoop. We took this problem to the Civil Service Commission trying to get some administrative relief under their authority. We had a lengthy meeting there, and they informed us that they could not give us authority to make temporary appointments under the Administrative Procedures Act, and thought that the course we are now pursuing here today was the course best suited to take care of our particular problem.

Mr. Fogarty. During this same discussion yesterday, Mr. Laird said:

The problem here is that no one likes to take these jobs when there are other agencies requesting examiners. They do not like to take the position on a temporary basis like this.

Mr. Beelar. There is a problem, but to me that would be the lesser of the two evils of picking these people out of the agency behind the desk and saying, "For one year and a half you can be a judge in the cases that you have been handling administratively."

These are cases where the agencies handling them have turned the citizens down and said, "You can have a fair hearing."

(Discussion held off the record.)

Mr. Fogarty. You have a real problem, and we want to cooperate with you, Mr. Schottland, in attempting to arrive at a solution everyone can be reasonably satisfied with.

Mr. SCHOTTLAND. We appreciate your consideration of this, Mr. Chairman, and we will see what we can come up with.

Mr. FOGARTY. Several Members of Congress have mentioned to me their concern with this problem. I have here a letter from Congressman Fascell, which is typical of Members' reactions and which I will place in the record.

(The letter referred to follows:)

CONGRESS OF THE UNITED STATES,
HOUSE OF REPRESENTATIVES,
Washington, D. C., June 7, 1958.

Hon. JOHN E. FOGARTY,
Chairman, Appropriations Subcommittee for Departments of Labor and Health, Education, and Welfare, the Capitol.

DEAR MR. CHAIRMAN: I am advised the Department of Health, Education, and Welfare will submit a supplemental request for funds for its departmental operations.

In this connection, I respectfully call to your attention a situation which evidently exists not only in my district, but in many other areas around the country. It concerns the inordinate length of time an applicant under the social-security law must wait before obtaining appellate consideration and action on his claim. I am enclosing correspondence on this subject which developed as a result of my curiosity about and final inquiry into the reasons for such delay. The number of such files in my office has been steadily increasing.

A disabled person applying for assistance under the social-security program certainly is not in any position to wait almost a year (refer to April 1958 letter from Miami office) before knowing whether or not he will receive any benefits. I am hopeful your committee, in considering the Department's supplemental request, will question the Department about this deplorable situation and with your help, aid them in overcoming it.

Sincerely yours,

DANTE B. FASCELL,
Member of Congress.

THURSDAY, JUNE 26, 1958.

OFFICE OF THE SECRETARY

SALARIES AND EXPENSES, OFFICE OF FIELD ADMINISTRATION

WITNESSES

CHESTER B. LUND, DIRECTOR, OFFICE OF FIELD ADMINISTRATION
ROBERT W. BROWN, ACTING DEPARTMENT BUDGET OFFICER

(The following excerpt from H. Doc. 394 is placed in the hearings record in accordance with an earlier order of the subcommittee:)

"OFFICE OF THE SECRETARY

"SALARIES AND EXPENSES, OFFICE OF FIELD ADMINISTRATION

"The limitation under this head in the Departments of Labor, and Health, Education, and Welfare Appropriation Act, 1959, on the amount available for transfer from the Federal old-age and survivors insurance trust fund, is increased by $18,000."

The projected expansion in employment in the Social Security Administration to process an increased workload of claims and hearing and appeal work will entail an increase in the level of operations of the Office of Field Administration. This proposed transfer of an additional amount is to provide staff to carry out such necessary functions as payrolling, voucher examination, and certain personnel and administrative services for the Social Security Administration.

Mr. FOGARTY. Mr. Lund, we will be glad to hear your statement now.

Mr. LUND. Mr. Chairman and members of the committee, as you are well aware a change in workload factors has forced OASI to request an increase in their 1959 estimate to permit employment of approximately 800 additional positions in district and appeals council offices.

The Office of Field Administration through its business management staffs in the regions will be required to provide payroll, voucher examination, personnel, and certain other office management services for this staff. The present workload will not allow any absorption. Added responsibilities in all of these areas have in the past few years demanded increased productivity sacrificing in many cases efficiency.

To process this increased workload for fiscal year 1959, we are requesting 6 clerical positions to maintain these necessary functions on a current basis, at a cost of $18,000 to be transferred from the Federal old-age and survivors insurance trust fund.

Mr. FOGARTY. An increase of $18,000, to be transferred from the OASI, trust fund is requested to handle the personnel, voucher review, and other work of this type for 800 additional employees who will be hired if the OASI request we heard earlier is granted.

The increase in workload is about 7 percent. The increase in OASI funds for which you are asking is less than 3 percent.

Mr. LUND. Yes, sir.

Mr. FOGARTY. It looks as if you either have too much money now or will have to work people overtime to handle this additional work.

Mr. LUND. We actually have a situation where we are ahead of ratio schedules and we have been working these people very hard. The standard for personnel, for example, is 110. We are doing 147 units.

Instead of 250 units we are doing 290 units in the payroll unit.

We feel that in 3 of our offices, because of the distribution of these OASI people, we could manage without additional assistance and we could get by with 6 people for the remaining offices to do this work.

Mr. FOGARTY. Do you think you will be asking these people to work overtime, then?

Mr. LUND. No. If the current schedules now projected are maintained by OASI we will be able to manage with this. If they increase then we will have no flexibility. We are right up on a specific schedule.

Mr. FOGARTY. This is a good argument for the regional offices doing all this type of work for the field offices, like the Food and Drug Administration.

Mr. LUND. We will look into that further, too, sir.

Mr. FOGARTY. Thank you very much, Mr. Lund.

THURSDAY, JUNE 26, 1958.

GRANTS TO STATES FOR UNEMPLOYMENT COMPENSATION AND EMPLOYMENT SERVICE ADMINISTRATION—DEPARTMENT OF LABOR

WITNESSES

WILLIAM U. NORWOOD, JR., PRESIDENT, INTERSTATE CONFERENCE OF EMPLOYMENT SECURITY AGENCIES

A. J. WEEMS, CHAIRMAN, ADMINISTRATIVE GRANTS COMMITTEE, INTERSTATE CONFERENCE OF EMPLOYMENT SECURITY AGENCIES

Mr. FOGARTY. Mr. Norwood and Mr. Weems will be our next witnesses. Who will present the conference's statement?

Mr. NORWOOD. I am prepared to do so, Mr. Chairman.

Mr. FOGARTY. You may proceed.

Mr. NORWOOD. Mr. Chairman and gentlemen of the committee, my name is William U. Norwood, Jr. I am director of the Florida State Employment Service of the Florida Industrial Commission, and am president of the Interstate Conference of Employment Security Agencies. My appearance here is in behalf of the administrators of the employment security program in all States. I appreciate this opportunity to speak to you regarding a supplemental appropriation for grants to the States for administration of the unemployment compensation and employment service programs in the fiscal year 1959.

In the President's 1959 budget, an amount of $329,300,000 originally was requested for these purposes. This amount, which included a $10 million contingency fund, was based on an assumption that insured unemployment would average about 2 million per week in 1959.

On March 25 the House Committee on Appropriations reported on H. R. 11645, the Departments of Labor, Health, Education, and Welfare and related agencies appropriations bill, 1959. (H. Rept. No. 1565). The committee recommended a reduction from the original request for grants to the States of $24,300,000. The House accepted this recommendation and passed the bill, H. R. 11645, which appropriated $305 million including a $10 million contingency, for grants to the States. The amount allowed was based on insured unemployment of 2 million per week, which your committee, as indicated in its report, believed to be unrealistic. We regret that you were unable to obtain from the Department of Labor more current estimates of assumed unemployment in the fiscal year 1959. This might have precluded the necessity for a supplemental request. Be that as it may, I was dismayed and disappointed by the reduction of $24,300,000 from the original request.

As president of the Interstate Conference of Employment Security Agencies, I wrote the clerk of the Subcommittee of Labor-HEW Appropriations of the Senate Committee on Appropriations requesting an opportunity to be heard on the appropriation request. On May 12 I appeared before the subcommittee and requested full restoration of the amount cut by the House. My position was then and is now that the entire $329,300,000 would be needed to finance adequate administration of the unemployment compensation and employment service programs in 1959 at the then assumed 2 million workload

level. In support of this position I made the following statement and I quote:

> The employment security program is one of service—dealing with people. We are not engaged in the mass production of manufactured units—with associated volume-cost connotations. Rather, we are conscientiously, and I honestly believe, successfully, operating a nationwide employment security system in an effective and efficient manner, while at the same time preserving the integrity of the program by guarding against improper payments of benefits. The effect of volume on our operations has been exaggerated, and perhaps misunderstood. I am convinced that the degree to which this will be a factor in 1959 is insignificant. I foresee little or no so-called absorption of costs in 1959 in employment security operations.

Those are still my views, even though the Senate Committee on Appropriations has recommended the House figure of $305 million, including a $10 million contingency, to handle a 2 million workload.

The President now has requested a supplemental appropriation for grants to the States for administration of unemployment compensation and employment service in the fiscal year 1959. This is based on a revised estimate of 2.9 million insured unemployment.

It would, I believe, require a total fiscal 1959 appropriation of about $363,500,000 to finance fully adequate performance with a 2.9 million workload. That increased load now being assumed, any reduction below $363,500,000 will require shortcuts and poorer service in order to absorb the cut.

The supplemental request, now pending before you, would increase the original fiscal 1959 request from $329.3 million to $339.9 million. That's an increase of only $10.6 million, or 3.2 percent. Its purpose is to handle an increase of 45 percent in the unemployment compensation workloads.

Those unrealistic figures suggest, on their face, that some overall fiscal policy considerations were injected into the appropriation requests, rather than the amount being based on workloads and program needs and objectives.

We recognize, however, that this committee is starting with a lower base figure, namely $305 million for a 2 million workload. On that basis, the pending supplemental adds $34.9 million, which would be an increase of 11.44 percent in dollars to handle the increase of 45 percent in unemployment compensation workload. We submit that those figures are still too far apart to be realistic.

Currently the States are expending at an annual rate of about $335 million and, as you gentlemen know, the insured unemployment level now is slightly under 2.8 million. I should like to point out that this means the States are already using more than the base amount recommended for 1959.

Current expenditures still reflect a considerable degree of deferment or curtailment of important work. As one example, the overpayment and fraud investigation program has been seriously affected.

The States have demonstrated their desire to operate economically, but they should not be expected to perform miracles at the expense of the people whom they serve; $34.9 million just won't finance a 0.9 million claims workload increase, in my judgment.

It is my belief that workloads arising out of an increase of 900,000 additional insured unemployment would cost some $34 million—not the $10,600,000 which is the President's supplemental request.

I base my conclusions on the same logic and reasoning which I followed when the 2 million insured unemployment rate was under consideration. I said then, and I want to repeat now that the States genuinely need full-time allowances and units of cost in order to bring operations in 1959 to a level of performance which would be satisfactory to the Congress and the public whom we serve.

Mr. Chairman, it was stated in the report of this committee that the impact of workload volume should cause a savings in unit costs. Recent State experience, which reflects some degree of absorption, was cited as evidence of this assumption. It is true in recent months that the States did make emergency and temporary adjustments which resulted in some artificially depressed time factors. But to a large degree these represented curtailments or deferments rather than so-called absorption. It is noted that current experience shows these to be much less than probably this committee believed to be the case when it was considering the original appropriation request.

It is equally obvious that the full effect of our economic downturn was difficult to assess in its beginning stages. There was a significant lag in "staffing up." This was due, first, to an understandable reluctance on the part of State administrators to hire additional personnel until the economic picture could be more completely judged; and second, to the seemingly unavoidable delays inherent in merit system recruitment and appointment. Then, too, the impact of spiralling claims loads was most unevenly distributed throughout the country, and physical space limitations, which are only now being effectively relieved, had to be reckoned with. In the pattern of the last few months there also has been a very substantial amount of uncompensated overtime, plus a deferment both of compensatory time off and the taking of annual leave.

In part the slack was taken up by diversion of employment service staff in order to meet the impact of the claims workloads. While this is highly undesirable, it is almost unavoidable in the short run.

During fiscal year 1959, we expect that these factors will have been overcome. The enforced speedup and corner-cutting will have been eliminated. The States will have staffed up for the job to be done. Space limitations will have been corrected. In the interest of efficiency and equity, employees must be allowed to use accrued leave when due, and uncompensated overtime must be eliminated.

The diversion of employment service staff, which occurred in fiscal 1958, must be avoided in 1959 if we are to afford to applicants the type of placement service to which they are entitled. It is clear that particular effort will be needed in behalf of veterans, older workers, youth, and the physically handicapped under present labor market conditions.

My purpose in bringing to your attention these facts, which certainly are not new, is a very simple one.

First, in my considered judgment, the total appropriation request of $339,900,000 is not adequate to finance grants to the States at an average weekly insured unemployment level of 2,900,000—if, and this is a vital "if," quality of performance is to be maintained, the integrity of the unemployment compensation system fully safeguarded, and maximum placement services made available to all unemployed workers.

Second, since this committee really is considering a supplemental request amounting to $34,900,000, I am disturbed over the possibility that you gentlemen might conceivably conclude that some reduction could be applied against this amount. That, I believe, would be disastrous. As I previously indicated, $363,500,000 would be needed in fiscal 1959 to handle the assumed workloads at full performance levels. The $339,900,000 therefore has a "built in" cut of $23,600,000 which the States are going to have to "absorb," if you please.

Third, the $10 million contingency fund recommended is definitely insufficient. Not only do we have the normal type of charges to this fund in prospect, but several States are amending their State laws to provide temporary State unemployment compensation benefits. This, of course, is an added contingency charge and will increase the cost of administering the program in those States.

Since it is difficult to predict the actual level of insured unemployment which will be experienced in fiscal year 1959, it might be best for the committee to provide the full $319,300,000 originally requested as a base appropriation and needed for a workload of 2 million, and to provide a contingency fund of $44 million which would be used only to the extent needed and justified by increased costs. This would assure the States of adequate funds to handle whatever workload actually materialized.

We urge you to consider that approach. As an alternative, in case you decide to tie the revised base total of $329.9 million to some new assumed workload volume, we suggest that it should not be expected to finance more than a 2.3 million workload, at most.

This committee is well aware that the State employment security agencies are not strictly "outsiders," in making this appearance. In truth and fact, we are the sole users of the funds we are seeking. It is only through congressional hearings such as this one today that we are afforded an opportunity to come face to face with people directly involved in determining the amount of money provided for the administration of State employment security programs.

Therefore, we are particularly appreciative of the chance thus afforded us to appear here today, and we are hopeful that the point of view of the people actually engaged in administering the program will be carefully considered by your committee.

Mr. Chairman, this concludes our statement but we shall be happy to try to answer any questions which members of the committee may have.

I appreciate the opportunity to be heard, and if there are questions we will try our best to answer them.

Mr. Fogarty. Thank you very much. That was a very good statement Mr. Norwood.

SUBCOMMITTEE ON DEPARTMENT OF THE INTERIOR AND RELATED AGENCIES

MICHAEL J. KIRWAN, Ohio, Chairman

W. F. NORRELL, Arkansas
ALFRED D. SIEMINSKI, New Jersey
DON MAGNUSON, Washington
BEN F. JENSEN, Iowa
IVOR D. FENTON, Pennsylvania
HAMER H. BUDGE, Idaho

TUESDAY, JUNE 24, 1958.

DEPARTMENT OF THE INTERIOR

BUREAU OF LAND MANAGEMENT

WITNESSES

JAMES P. BEIRNE, ASSISTANT DIRECTOR
CHARLES P. MEAD, ASSISTANT DIRECTOR
HAROLD R. HOCHMUTH, LANDS STAFF OFFICER
MAX CAPLAN, MINERALS STAFF OFFICER

MANAGEMENT OF LANDS AND RESOURCES, BUREAU OF LAND MANAGEMENT

Program and financing

	Presently available	Revised estimate	Difference
Program by activities:			
1. Lease and disposal of lands and mineral resources	$5,729,400	$6,030,700	+$301,300
2. Management of grazing lands	2,413,500	2,428,500	+15,000
3. Forestry	5,154,000	5,154,900	+900
4. Cadastral surveys	2,032,500	2,033,600	+1,100
5. Soil and moisture conservation	3,717,700	3,737,400	+19,700
6. Fire suppression	400,000	400,000	----------
7. Maintenance of physical facilities	50,000	50,000	----------
8. Maintenance of access roads	250,000	250,000	----------
9. Weed control	1,059,000	1,071,000	+12,000
10. General administration	1,383,900	1,383,900	----------
Total obligations	22,190,000	22,540,000	+350,000
Financing: Appropriation (new obligational authority)	22,190,000	22,540,000	+350,000

Obligations by objects

Object classification	Presently available	Revised estimate	Difference
Total number of permanent positions	2,182	2,214	+32
Full time equivalent of all other positions	528	531	+3
Average number of all employees	2,705	2,740	+35
Number of employees at end of year	2,812	2,844	+32
Personal service obligations:			
Permanent positions	$10,552,840	$10,752,540	+$199,700
Positions other than permanent	1,372,800	1,387,440	+14,640
Other personal services	651,460	681,920	+30,460
Total personal services	12,577,100	12,821,900	+244,800
01 Personal services	12,577,100	12,821,900	+244,800
02 Travel	1,194,700	1,203,700	+9,000
03 Transportation of things	112,100	155,900	+43,800
04 Communication services	170,400	172,400	+2,000
05 Rents and utility services	163,900	177,900	+14,000
06 Printing and reproduction	119,000	125,000	+6,000
07 Other contractual services	3,961,200	3,963,200	+2,000
Services performed by other agencies	63,300	63,300	
08 Supplies and materials	1,982,000	1,985,000	+3,000
09 Equipment	733,900	748,900	+15,000
10 Lands and structures	390,000	390,000	
11 Grants, subsidies, and contributions	693,350	703,750	+10,400
15 Taxes and assessments	36,800	36,800	
Subtotal	22,197,750	22,547,750	+350,000
Deduct quarters and subsistence charges	7,750	7,750	
Total obligations	22,190,000	22,540,000	+350,000

Average salaries and grades

	Actual 1957	Estimate, 1958	Revised estimate, 1959
General schedule grades:			
Average salary	$5,128	$5,151	$5,212
Average grade	GS-7.2	GS-7.2	GS-7.2
Average salary of ungraded positions	$5,149	$5,208	$5,208

Mr. KIRWAN. The committee will come to order. We have received in House Document No. 394 eleven supplemental requests for fiscal year 1959 for consideration by the committee.

SERVICES OF REPRESENTATIVE SIEMINSKI

Mr. SIEMINSKI. Inasmuch as this will be my last appearance before this committee, I would like to take the time to express to you, Mr. Chairman, and to my colleagues, the profound respect for the devotion that I have come to experience in seeing you operate with this committee and our colleagues here, and on the floor of the House. Our whole United States Budget is predicated, it seems to me, on helping to preserve and enhance the value of what this committee passes on, and that is the renewable resources of the United States—its lands, its forests, its streams, its minerals, and, in their recreation, in our national parks, the health of our people. You give America, to put it in the vernacular, its real cashbox.

I have come to appreciate more and more the tremendous vigor of the United States in a manner new to me through you and the Interior Committee, and I wish you, Mr. Chairman, the very best, that your

health will remain good and that you will be reelected as often as you offer yourself to the people; and I know my colleagues join me in saying you have done a magnificent job for America. I shall miss you all.

Mr. KIRWAN. Thank you, Mr. Sieminski, and I wish you would still be with us next year. I know that goes for the committee. And I am grateful you came on the committee the day you did.

Mr. JENSEN. Mr. Chairman, I want to say I am very sorry our colleague, Mr. Sieminski, will not be with us next year or the year after. Of course we may see him back again in a couple years. He has been a very valuable member of this committee and a valuable Member of Congress. I have enjoyed my associations with Mr. Sieminski. He is a gentleman of the highest order and I am sorry his duties here will cease. I hope it is temporary.

We wish you, Mr. Sieminski, all the joys of living in this great America of ours.

Mr. SIEMINSKI. Thank you, Mr. Jensen. Your heart is as big, and open and kind as the beautiful State of Iowa, and its wonderful people.

Mr. BUDGE. In addition to the remarks of the chairman and the gentleman from Iowa, in which I heartily concur, concerning the gentleman from New Jersey, I would like to express to him the appreciation of those of us from the West for his interest in this committee and in that part of the United States, which is far removed from his home. We in the West very much appreciate the interest the gentleman from New Jersey has shown in that part of the United States, and hope he comes back on this committee.

Mr. SIEMINSKI. Thank you, Mr. Budge. Mr. Chairman, I have spent many summers in the West with my family and know the beautiful State of Idaho, and through the kindness of this committee and its chairman, I have been privileged to travel through our national parks and forests, and how anyone could fail to appreciate and admire the great interest and devotion of the chairman and members of this subcommittee to the vigor of America I do not know; I feel I have been highly honored to serve on the Interior Committee and to share in some of the things that this committee has done for the good of America.

Mr. JENSEN. Let me say, Mr. Chairman, that I was with Mr. Sieminski in the West a few years ago and I was pleased to see what a great interest a man from the East was taking in the wide open spaces in the West. He and his good wife were traveling over the Western States to get firsthand knowledge of the things he was helping to appropriate money for for that great expanse of the West. I hope that his people will appreciate that he has not only been a district representative, Mr. Sieminski has been a United States Representative. Not only that, he is a great student of world affairs. He has in fact been a world representative, so to speak, for the good of America. And to lose a man like Mr. Sieminski from the Congress of the United States is a thing that makes our hearts ache. Some folk may say he is a politician, but you know you have to be a politician before you can be a statesman, and Mr. Sieminski has developed from a politician to a statesman and he has no regrets, I am sure, for the actions he has taken for the good of America in this committee and

other committees on which he has served, and on the floor of the House.

Mr. SIEMINSKI. Thank you, Mr. Jensen.

Though one may read of Democrats and Republicans and controversies on the House floor, and though we may vote differently, each of us here in our hearts and in our minds builds America; we help it grow.

When the shooting took place on the House floor, Mr. Jensen was shot and hurt. I happened to jot down what I saw; it was printed in the Congressional Record, and in the U. S. News and World Report. In that eyewitness account, I wrote of Mr. Jensen. I came very close to Mr. Jensen and his people. I would like to express my appreciation also, to Mr. Culp and Mr. Wilhelm. As a Representative, I am deeply indebted to the expert administrative assistance that each gives us as Members of Congress on this committee. They who stay on year after year do much to give our Government its sense of permanence and stability. Thank you Mr. Culp and Mr. Wilhelm.

MANAGEMENT OF LANDS AND RESOURCES

Mr. KIRWAN. We have the Bureau of Land Management with us this morning. Mr. Beirne, do you have a statement?

Director Woozley had expected to be here this morning to present a statement, but he was called out of town. I have his statement, which I would like to put in the record.

Mr. KIRWAN. All right.

(The statement referred to follows:)

BUREAU OF LAND MANAGEMENT, STATEMENT OF EDWARD WOOZLEY, DIRECTOR, BEFORE THE HOUSE APPROPRIATIONS SUBCOMMITTEE ON SUPPLEMENTAL APPROPRIATION, 1959

I appreciate the opportunity to appear before this committee to explain our 1959 supplemental estimate to provide an additional amount of $350,000. Of this amount $270,000 is necessary to enable the Bureau to process a tremendous increase in applications for oil and gas leases resulting from the discovery of oil in the Kenai Peninsula and the opening of other areas previously included in a withdrawal order.

The balance of $80,000 is for increased pay costs granted professional engineers by Civil Service Commission Circular No. 793, primarily mining engineers.

Provision for enlargement of the Alaska land offices was not made in the regular 1959 estimates as the effect of the restoration was not known. The fact that such provision was not made was stated on page 2 of the justification submitted to the Congress in connection with our request for funds for 1959.

At the end of April, this year, there were over 11,800 cases awaiting action in the Alaska land offices. Failure to keep current with filings for leases results in loss of revenue to the Territory and the Federal Government. In an effort to reduce this backlog, employees have been detailed temporarily from other Bureau activities in the Territory and from land offices in continental United States. This temporary arrangement cannot be continued indefinitely without detriment to other Bureau programs.

The modification of Public Land Order No. 82, which was approved by the Secretary on April 22, 1958, will release 16,000 acres for competitive oil and gas leasing and eventually an additional 20 million acres for noncompetitive leasing. There is also the possibility of the release of an additional 5 million acres under arrangements with the Fish and Wildlife Service. It is anticipated that approximately 9,000 additional applications for leases will be filed as a result of this modification.

I would like to point out to the committee that the increasing backlog of unclosed cases is not confined to Alaska. The population growth and accelerated

development of the Western States has created an increasing demand for mineral leases and acquisition of small tracts for residential and recreational purposes. These factors have contributed substantially to the increase in the total number of unclosed cases in continental United States which numbered almost 74,000 at April 30.

There has been a total increase of over 11,000 cases pending in the Bureau since July 31, 1957, an average of almost 1,300 cases per month. In spite of the increased efficiency of our lands and minerals staff and a considerable amount of overtime work in the land offices, we are unable to cope with the demand.

It is estimated that receipts from the applicants expected in Alaska alone will approximate $10 million annually when these lands begin producing. Under existing law $9 million of these receipts would be distributed to the Territory and $1 million to the United States Treasury. There also must be considered receipts of several millions from lease applications pending in the continental United States.

INCREASE IN ALASKA OIL AND GAS LEASING APPLICATIONS

Mr. BEIRNE. When we appeared before this committee in support of our regular appropriation for 1959, we stated in our justification that it was anticipated that Public Land Order No. 82 would be revised so as to make available some 20 million acres in Alaska for oil and gas leasing. We did not know at that time when the order would be issued and what the impact would be in 1959. The order was signed by the Secretary on April 22, but the order implementing the leasing has not yet been issued due to the request of the Senate committee which was considering H. R. 8054. It passed the Senate yesterday with amendments and we do not know whether the House will accept the amendments or the bill will go to conference. Upon acceptance of the provisions by both Houses, an order will be issued making those lands available for oil and gas leasing. It is anticipated the bill will be passed shortly and that the first order releasing the lands for leasing will be issued shortly thereafter.

To enable the Bureau to process the tremendous increase in applications for oil and gas leases resulting from the discovery of oil in the Kenai Peninsula, we are requesting $270,000.

JUSTIFICATION MATERIAL

Mr. KIRWAN. Insert in the record the supplemental request for $350,000 on page 19 of House Document 394, and the justification.

(The material referred to follows:)

"BUREAU OF LAND MANAGEMENT

"MANAGEMENT OF LANDS AND RESOURCES

"For an additional amount for 'Management of lands and resources', $350,000.'

This proposed supplemental appropriation is to provide for strengthening the land offices in Alaska. An accelerated demand for oil and gas leases occurred as a result of the discovery of oil on the Kenai Peninsula, and a continuing high demand is anticipated in view of the opening of additional acres to mineral leasing and mining location. In addition, funds are required to cover the cost of increases in salaries for certain engineers and scientists approved by the Civil Service Commission, effective December 29, 1957.

(H. Doc. 394)

Management of lands and resources

Request for 12 months from July 1, 1958	$350,000
Appropriation to date	$22,190,000
Employment:	
Average number, current appropriation	2,705
Number involved this estimate	35

PURPOSE AND NEED FOR SUPPLEMENTAL FUNDS

The estimate includes $270,000 to provide additional facilities for mineral leasing activities in Alaska.

The tremendous increase in applications for oil and gas leases in Alaska, resulting from an oil strike on the Kenai Peninsula in July 1957, requires additional funds for the operation of the land offices at Anchorage and Fairbanks. The present staffing cannot handle the increased workload and some 11,300 cases are unclosed as of February 28, 1958. Delay in issuing leases deprives the Territory and the United States Treasury of revenues which, it is estimated, will approximate $10 million annually when these lands are producing.

In addition the proposed modification of Public Land Order No. 82 will release 20 million acres for noncompetitive and 16,000 acres for competitive leasing. This will add substantially to the number of lease applications requiring processing.

Included also is $80,000 for additional pay costs required to be paid under Civil Service Commission Circular 793, Supplement 33.

Justification

Appropriation	Presently available	Revised estimate	Difference
Management of lands and resources	$22,190,000	$22,540,000	+$350,000
ACTIVITY AND SUBACTIVITY			
Lease and disposal of lands and mineral resources:			
(*a*) Adjudication of applications	3,277,200	3,547,200	+270,000
(*b*) Field examination and classification	1,752,200	1,783,500	+31,300
(*c*) Records improvement	700,000	700,000	
Total	5,729,400	6,030,700	+301,300
Adjudication of applications			270,000

This supplemental estimate for fiscal year 1959 in the amount of $270,000 is required to enable the Bureau to record, process, and issue leases resulting from tremendous increase of applications for oil and gas leases in Alaska. When the 1959 budget was prepared the impact of the accelerated demand for oil and gas leases was not anticipated. However, the number of applications for leases now on file and the anticipated additional filings make it necessary to request supplemental funds for our Alaska operations in fiscal year 1959.

This unprecedented surge in new oil and gas filings which has occurred at the Fairbanks and Anchorage offices is the direct result of the discovery of oil on the Kenai Peninsula in July 1957. In the first 4 months following the discovery, oil and gas lease filings numbered 5,900. Receipts from filing fees and advance rentals in this same period were $3,987,000.

In an effort to reduce the rapidly mounting backlog of cases all available employees have been detailed temporarily from other activities in Alaska to the land offices at Anchorage and Fairbanks. With the assistance of some experienced personnel detailed from land offices in the continental United States, this enlarged staff has issued over 6,000 oil and gas leases since January 1. However, this arrangement cannot continue without serious disruption to the Bureau's other programs in the Territory.

As of April 30, there were 11,836 cases awaiting action in the Alaska land offices. In other areas of the Bureau, we are confronted similarly with a rising number of unclosed land and mineral cases which precludes the transfer of permanent personnel to Alaska. At the Santa Fe, N. Mex. office the backlog of

cases on April 30 was about 8,000, at the Los Angeles office over 27,000 and at the Reno, Nev. office over 11,000.

In addition to the intensified interest caused by the oil strike on the Kenai Peninsula, modification of Public Land Order No. 82, approved by the Secretary on April 22, 1958, will release approximately 16,000 acres for competitive oil and gas leasing and 20 million acres for noncompetitive leasing. An additional 5 million acres may be made available through arrangements with the Fish and Wildlife Service. The Bureau anticipates that this will result in at least 9,000 additional applications, which combined with the present backlog, poses an insurmountable workload without additional personnel. The fact that provision for this purpose was not provided in our regular request for funds for fiscal year 1959 was clearly stated in the justifications submitted to the Congress.

Another consideration which emphasized the need of processing these cases promptly is the production of revenue to the Territory and the United States Treasury. Under the law, 90 percent of the receipts from mineral sources in Alaska are paid to the Territory. The caseload indicated above will have an approximate value of $10,725,000 in filing fees and in advance rentals of which over $1 million will be returned to the United States Treasury and over $9 million will be of immeasurable assistance to the economy of the Territory. Similarly, the States are deprived of 37½ percent of the receipts from mineral leasing within their boundaries on those cases on which lease applications are pending.

The discovery of oil on the Kenai Peninsula and the release of the lands under revised Public Land Order No. 82 will have a tremendous economic impact on the Territory of Alaska. Major oil companies already have spent upward of $15 million in exploration work in potential oil-producing areas. In addition, to further expenditures of even greater amounts in exploration, there will be the stabilization of yearlong employment through the erection and staffing of refineries, pipelines, distribution agents, etc. It is estimated that, when these refineries have been established, a sizable saving of one-third of the present cost may be made by the military in its requirements for petroleum products.

The economic development of Alaska will be further enhanced by making available to prospective industry a stable source of petroleum products at a price they can afford to pay and at the same time will go far to reducing the present high costs of these products to the general public. The receipts paid to the Territory will be available for improvement of Territorial services, such as roads, schools, etc.

The funds requested will provide 32 additional employees in the land offices in the following categories:

Adjudicators	3
Land law examiners	12
Draftsmen	3
Clerks and stenographers	14

Increased pay under Civil Service Circular 793, Supplement 33, dated December 9, 1957

Salary increases granted to professional engineers and certain scientists by Civil Service Commission Departmental Circular No. 793, Supplement No. 33, under section 803 (a) of the Classification Act of 1949, as amended, will result in additional costs of $80,000 to the Bureau of Land Management for fiscal year 1959. These additional costs cannot be absorbed by the Bureau without detriment to its essential operating programs.

In lands and minerals, it would be necessary to curtail the travel of field examiners and hearings officers, thus delaying final settlement of lands and minerals applications. In grazing administration, fieldwork in connection with range surveys and dependent property studies would be curtailed. Under soil and moisture conservation and weed-control programs, it would be necessary to delay the amending of contracts for reseeding and other land treatments.

Distribution of the amount to activities is as follows:

Lease and disposal of lands and mineral resources	$31,300
Management of grazing lands	15,000
Forestry	900
Cadastral surveys	1,100
Soil and moisture conservation	19,700
Weed control	12,000
Total	80,000

Mr. KIRWAN. $270,000 is for operation of the land offices in Alaska at Anchorage and Fairbanks?

Mr. BEIRNE. That is correct.

INCREASE IN BACKLOG OF LEASE APPLICATIONS

Mr. KIRWAN. How does the present backlog of lease applications in Alaska compare with a year ago?

Mr. BEIRNE. At the beginning of the fiscal year there were 4,655 cases on hand, and at the end of May there were 12,017 on hand, an increase of 7,362.

Mr. KIRWAN. That is a tremendous jump.

Mr. BEIRNE. It is, and it is important that these be processed because of the impact on the economy of Alaska. The Territory receives 90 percent of the receipts from mineral leases, and those receipts we anticipate will continue to the State when and if the statehood bill is passed. I might say no amount is included in this request in anticipation of implementing the statehood bill if it is passed.

PERSONNEL TRANSFERRED FROM OTHER FIELD OFFICES

Mr. KIRWAN. What steps have been taken to transfer personnel from other field offices and how many employees are currently on duty in Alaska?

Mr. BEIRNE. During the current fiscal year we aided Alaska by transferring some $47,000 in cash from the programs in the continental United States plus detailing some employees. The other activities in Alaska contributed approximately $53,000 in services, or a total increase this year of $100,000 over the initial base. In the Anchorage land office alone there were some 4,200 man-hours of service put in on the oil and gas work by other activities.

ADDITIONAL FUNDS ALLOWED IN 1959 BILL

Mr. KIRWAN. The conferees recently allowed an increase of $115,000 over the budget for the leasing and disposal of lands. Why cannot this, or some part of it, be used for the purposes for which you are now requesting additional funds?

Mr. BEIRNE. The recent increase was applied to prepare the records of the State of Montana by a contract to be issued in the next fiscal year.

TERMS OF OIL AND GAS LEASES

Mr. KIRWAN. Under what terms are oil and gas leases granted?

Mr. BEIRNE. At present the noncompetitive leasing requires a payment of 25 cents in Alaska for the first year, the second and third years are free, and 25 cents for the fourth and fifth years.

Mr. JENSEN. 25 cents per acre?

Mr. BEIRNE. 25 cents per acre; yes. At the request of the Senate committee, action was deferred and one of the amendments accepted by the committee was that the payments be the same as in the United States, which is 50 cents for the first year. However, it also provided

that leases filed prior to May 3 would be issued at the rate then in existence.

Mr. KIRWAN. That amendment will make it 50 cents per acre in Alaska, the same as in this country?

Mr. BEIRNE. That has passed the Senate and is before the House for acceptance or conference.

REVENUES FROM LEASES

Mr. KIRWAN. On what basis are the revenues from leases distributed to the Territory and the United States Treasury?

Mr. BEIRNE. Are you speaking of Alaska?

Mr. KIRWAN. Yes.

Mr. BEIRNE. 90 percent is paid to the Territory of Alaska and 10 percent to miscellaneous receipts.

SALARY INCREASES TO PROFESSIONAL ENGINEERS AND SCIENTISTS

Mr. KIRWAN. $80,000 is requested for salary increases granted to professional engineers and scientists. How many employees received these increases and is there any way you can absorb this small increase?

Mr. BEIRNE. That involved 120 employees. When the request for this $80,000 was processed it was prior to action by the Senate and the conferees, and we can absorb part of that at this time. We could not otherwise.

PARTIAL ABSORPTION VOLUNTEERED

Mr. KIRWAN. I do not see why you cannot absorb that.

Mr. BEIRNE. We can absorb $33,700 and we feel we should receive $46,300.

Mr. KIRWAN. Put that in the record.

(The information follows:)

Analysis by activities of $80,000 requested for increased salary costs for engineers

	Required	To be absorbed
Lands and minerals	$31,300	----------
Grazing administration	15,000	----------
Forestry	----------	$900
Cadastral survey	----------	1,100
Soil and moisture	----------	19,700
Weed control	----------	12,000
Total	46,300	33,700

Mr. KIRWAN. Mr. Sieminski.

Mr. SIEMINSKI. No questions.

Mr. KIRWAN. Mr. Jensen.

NUMBER OF APPLICATIONS ON FILE

Mr. JENSEN. How many of these applications did you say were on file now?

Mr. BEIRNE. At the end of May there were 12,017.

Mr. JENSEN. Comprising how many acres?

Mr. BEIRNE. I do not believe I can give the exact acreage on that. Mr. Caplan, our minerals staff officer, informs me about 18 million acres are involved in this.

Mr. JENSEN. 18 million acres at 25 cents an acre, that would be $4,500,000. The Territory gets 90 percent of that?

Mr. BEIRNE. That is right.

Mr. JENSEN. And 10 percent goes into our Treasury?

Mr. BEIRNE. That is correct.

DISCOVERY OF OIL IN ALASKA

Mr. JENSEN. Just what is the situation up there so far as the discovery of oil is concerned? Is it promising?

Mr. BEIRNE. I might ask Mr. Caplan, our minerals staff officer, to discuss the technical situation up there.

Mr. CAPLAN. Congressman, the discovery well was brought in on July 23, 1957, and our information is that it is a 900-barrel discovery well and that it is a very promising discovery.

Mr. JENSEN. Just where was that?

Mr. CAPLAN. On the Kenai Peninsula.

Mr. JENSEN. I know it is on the Kenai Peninsula, but the Kenai Peninsula covers a big territory. Just where was it?

Mr. CAPLAN. It is approximately 150 miles southwest of Anchorage.

Mr. JENSEN. That is getting down pretty close to Homer?

Mr. CAPLAN. In that general vicinity; and there are several other wells drilling at the present time.

Mr. JENSEN. You say there are several other wells drilling at the present time?

Mr. CAPLAN. Yes, sir.

Mr. JENSEN. In that area?

Mr. CAPLAN. In that area. There was another well drilled within 2 miles of the discovery well, but I do not know the result of it. There is a third well being drilled on Deep Creek which is now down in excess of 13,000 feet, and whatever results have been determined from it have not yet been announced so far as I know.

Mr. JENSEN. Are any wells being drilled any other places in Alaska?

Mr. CAPLAN. Yes, there are several other wells being drilled in the Territory.

Mr. JENSEN. Where?

Mr. CAPLAN. My information is that there is one on Icy Bay and at Wide Bay, which is just off Kodiak Island.

Mr. JENSEN. Thank you.

AMOUNT OF SUPPLEMENTAL REQUEST TO BE ABSORBED

Mr. Beirne, you said you could absorb how much money?

Mr. BEIRNE. $33,700 covering activities in which increases were granted during the conference.

Mr. JENSEN. So your request can be reduced by $33,700.

Mr. BEIRNE. That is correct.

Mr. JENSEN. That is all.

Mr. KIRWAN. Let me ask a question there, if I may, before turning the questioning over to Mr. Budge.

I cannot understand why you say there are just several wells being drilled. You know of several others being drilled up there?

Mr. CAPLAN. Yes, sir.

Mr. KIRWAN. Here they are going to lease 20 million acres for 25 cents for the first year and the second and third years are free, so for 25 cents an acre they are getting a lease for 3 years.

Mr. CAPLAN. Congressman, there is a statute which provides——

Mr. KIRWAN. I understand, but I do not understand why we are going to make a present to them.

Mr. CAPLAN. The amendment to H. R. 8054 provides that the first year's rental shall be the same as in the United States, which would bring it up to 50 cents.

Mr. KIRWAN. But they are certainly getting a present if they are going to have this land for 3 years if there is anything around there.

Mr. CAPLAN. The same thing is true of public domain in this country.

Mr. KIRWAN. I understand that. We allow them to come in the public domain for 25 cents an acre for 3 years in Alaska, or 50 cents an acre here for 3 years.

Mr. CAPLAN. These are wildcat lands.

Mr. KIRWAN. If they were going to develop the lands I would say fine, but we give them a lease, and all they have to pay is 25 cents an acre for 3 years.

Mr. BUDGE. How long has this 25 cents per acre fee existed?

Mr. CAPLAN. The 25-cents-per-acre minimum has been in effect since the passage of the Mineral Leasing Act in 1920.

Mr. BUDGE. Has the Department made any recommendation that the fee be raised?

Mr. CAPLAN. The Department has made a favorable report on the recommendation in the Senate report on H. R. 8054, which would set the Alaska rental at the same rental as in the United States, which is 50 cents per acre for the first year.

Mr. BUDGE. But the Department did not initiate that, did it?

Mr. CAPLAN. That was as a result of the Senate subcommittee's action.

Mr. BUDGE. It seems amazing to me that Federal employees come up here periodically and want their salaries increased commensurate with inflation, which is as it should be, but at the same time you should explore bringing these fees and rentals up to date. From 1920 to 1958, instead of 25 cents per acre I would think the inflation of the dollar would bring it up to at least 75 cents per acre.

I wish the Bureau of Land Management would go through all these fees and recommend where they should be in view of the cheapening of the dollar.

(NOTE.—Subsequent to the hearings, H. R. 8054 was enacted into law on July 3, 1958 (Public Law 85–505). Among its provisions is the requirement that the rentals on noncompetitive oil and gas leases in Alaska will be the same as in the United States.)

SUMMARY OF 1959 APPROPRIATIONS AND EMPLOYMENT HISTORY

Mr. Chairman, I realize the witnesses here would not be in a position to furnish the information I would like to have from the Department, but I would like, with the chairman's permission, to have a statement inserted at this point in the record by the Department giving the total dollars in their original budget as submitted for fiscal 1959, the total of any prior supplementals, the total of the increases by congressional action on the budget, primarily by the other body, and then add in the total requested in this supplemental.

In addition to that I would like a breakdown of the number of employees in the Department of the Interior by years for the past 10 years, and a breakdown of the total salary and retirement payments of the Department of the Interior by years for the past 10 years.

I ask for that because I am just curious to know just how fast we are increasing or decreasing, as the case may be, in the operations of the Department, and then a little later I would like to go into some of these fees and see if we cannot offset some of the increases in some of these costs by increases in fees.

Mr. KIRWAN. All right.

(The information follows:)

DEPARTMENT OF THE INTERIOR

Summary of budget estimates and appropriations, fiscal year 1959, as of June 25, 1958 (other than reclamation and power marketing agencies)

Bureau or office	Budget estimate, fiscal year 1959	Congressional action	Pending in H. Doc. 394	Total
Departmental offices	$4,510,000	+$3,102,000	$530,000	$8,142,000
Office of Saline Water	825,000		530,000	1,355,000
Office of Oil and Gas	550,000	−25,000		525,000
Office of the Solicitor	2,873,000	−73,000		2,800,000
Office of Minerals Mobilization	262,000			262,000
Acquisition of Strategic Minerals		+3,200,000		3,200,000
Bureau of Land Management	25,375,000	+1,500,000	350,000	27,225,000
Bureau of Indian Affairs	99,369,000	+14,770,000	4,000,000	118,139,000
Geological Survey	36,750,000	+165,000	3,983,000	40,898,000
Bureau of Mines	25,334,000	+1,719,000	14,180,000	41,233,000
National Park Service	62,362,000	+7,775,000	11,288,000	81,425,000
Bureau of Sport Fisheries and Wildlife	13,680,100	+2,579,350	325,625	16,585,075
Bureau of Commercial Fisheries	6,541,000		425,625	6,966,625
Office of the Commissioner of Fish and Wildlife	307,800			307,800
Office of Territories	10,815,000	+1,300,000		12,115,000
Office of the Secretary	2,500,000			2,500,000
Commission of Fine Arts	35,000			35,000
Virgin Islands Corporation	130,000			130,000
Total	287,708,900	+32,910,350	35,082,250	355,701,500

Department of the Interior—Statement on Employment

Other than reclamation and power marketing agencies

Bureau or office	Estimated, 1958	Year ended June 30—								
		1957	1956	1955	1954	1953	1952	1951	1950	1949
DEPARTMENTAL OFFICES										
Office of Saline Water:										
Number of employees	14	14	10	7	6	5				
Total salaries	$90,500	$83,107	$76,140	$57,205	$38,317	$45,314				
Retirement cost [1]	$5,880									
Office of Oil and Gas:										
Number of employees	62	54	52	52	56					
Total salaries	$450,000	$373,072	$356,982	$344,943	$507,230					
Retirement cost	$29,000									
Office of the Solicitor: [2]										
Number of employees	364	364	367	367	345					
Total salaries	$2,440,000	$2,409,698	$2,373,417	$2,286,127	$2,189,008					
Retirement cost	$158,600									
Office of Minerals Mobilization:										
Number of employees	24	20	24							
Total salaries	$195,000	$157,144	$141,715							
Retirement cost	$12,675									
BUREAU OF LAND MANAGEMENT										
Number of employees	2,927	2,856	2,267	1,889	1,748	1,765	1,662	1,398	1,385	1,353
Total salaries	$13,425,251	$11,023,771	$9,050,425	$7,601,710	$7,513,908	$7,151,604	$5,889,985	$5,082,747	$4,759,955	$4,558,888
Retirement cost	$712,550									
BUREAU OF INDIAN AFFAIRS [3]										
Number of employees	12,200	11,459	10,950	14,005	14,275	13,435	12,924	14,248	12,588	12,890
Total salaries	$50,104,000	$45,882,791	$43,110,975	$49,746,759	$46,444,401	$43,653,521	$39,999,163	$36,197,557	$32,814,645	$31,012,577
Retirement cost	$2,891,000									
GEOLOGICAL SURVEY										
Number of employees	7,800	7,606	7,488	7,385	7,916	7,762	7,717	6,917	[4] 8,557	[4] 7,907
Total salaries	$39,200,000	$37,978,968	$36,654,170	$34,104,829	$32,927,005	$31,523,759	$29,599,745	$24,160,539	$20,421,454	$15,962,777
Retirement cost	$2,265,000									
BUREAU OF MINES										
Number of employees	4,640	4,604	4,289	4,262	4,737	5,005	4,843	5,060	4,505	4,006
Total salaries	$23,545,194	$23,214,913	$22,101,562	$20,885,100	$22,421,832	$22,655,261	$20,857,843	$18,466,721	$15,789,425	$13,927,744
Retirement cost	$1,536,805									

NATIONAL PARK SERVICE										
Number of employees	8,300	7,766	7,205	6,479	6,335	6,370	6,174	6,464	6,519	5,712
Total salaries	$26,580,767	$24,929,857	$22,484,531	$19,433,874	$19,506,697	$18,949,988	$17,231,874	$16,079,075	$14,785,401	$12,547,052
Retirement cost	$1,178,026									
FISH AND WILDLIFE SERVICE										
Number of employees	4,850	4,820	4,275	4,161	3,877	3,876	3,560	3,692	3,546	3,165
Total salaries	$21,169,682	$18,318,077	$17,197,555	$14,766,851	$14,146,971	$13,783,509	$12,549,284	$11,687,988	$10,786,388	$9,349,928
Retirement cost	$1,131,497									
OFFICE OF TERRITORIES [5]										
Number of employees	1,594	1,834	3,242	3,091	3,437	3,989	4,558	4,238	4,216	4,103
Total salaries	$12,316,301	$14,855,799	$18,971,547	$18,330,477	$21,841,405	$23,868,104	$24,659,336	$21,237,970	$18,006,577	$17,278,600
Retirement cost	$706,162									
VIRGIN ISLANDS CORPORATION										
Number of employees	719	717	739	785	1,069	1,047	987	1,161	1,171	591
Total salaries	$1,199,523	$1,166,610	$1,187,124	$1,195,158	$1,383,402	$1,092,439	$1,050,623	$996,143	$639,625	$659,249
Retirement cost	$26,288									
OFFICE OF THE SECRETARY										
Number of employees	285	265	272	271	263	354	314	330	395	388
Total salaries	$2,055,000	$1,922,120	$1,870,752	$1,749,316	$1,732,425	$2,251,570	$1,711,474	$1,830,908	$1,988,514	$1,780,260
Retirement cost	$133,575									
COMMISSION OF FINE ARTS										
Number of employees	4	4	2	2	2	2	2	2	2	2
Total salaries	$26,000	$21,490	$14,447	$13,361	$14,539	$10,942	$12,076	$8,846	$8,850	$8,740
Retirement cost	$1,690									
Totals:										
Number of employees	43,783	42,383	41,182	42,756	44,066	43,610	42,741	43,510	42,884	40,117
Total salaries	$192,797,218	$182,337,417	$175,591,342	$170,515,710	$170,667,140	$164,986,011	$153,561,403	$135,748,494	$120,000,834	$107,085,815
Retirement cost	$10,788,748									

[1] Retirement costs prior to fiscal year 1958 were appropriated in a lump sum for the entire Government and not paid by individual agencies.

[2] In prior years legal services were financed from appropriations of the various bureaus and offices of the Department.

[3] In 1955 includes 3,585 employees in Indian hospital and health activities, which function was transferred to the Public Health Service on July 1, 1955, pursuant to act of Aug. 5, 1954 (68 Stat. 674).

[4] Includes approximately 2,300 gage and well readers no longer counted as employees (handled as contracts).

[5] In 1956 includes 1,049 employees of Alaska Road Commission, which function was transferred to the Department of Commerce on Sept. 16, 1956, pursuant to act of June 29, 1956 (70 Stat. 374).

NOTE.—Number of employees includes permanent and temporary. It should be emphasized that the total employment is year-end employment whereas total salaries represent funds used to pay for services rendered wholly or partly during the year. The dollar figure includes pay for firefighters in emergency situations who would not be counted in the year-end employment figure. It includes pay of employees on a part-time basis and those that have resigned or transferred prior to year end. Therefore, a comparison of dollars and year-end employment would not be meaningful.

Reclamation and power marketing agencies, year ended June 30

Bureau or office	Estimated, 1958	1957	1956	1955	1954	1953	1952	1951	1950	1949
Bureau of Reclamation:										
Number of employees	10,400	10,707	10,258	9,750	10,500	11,939	14,037	16,836	19,261	15,653
Total salaries	$58,000,000	$54,789,290	$51,103,390	$48,684,437	$52,426,309	$63,085,282	$66,344,250	$70,917,845	$64,702,113	$50,770,587
Retirement costs	$3,738,542									
Bonneville Power Administration:										
Number of employees	2,390	2,475	2,297	2,184	2,682	3,194	3,093	2,780	2,315	1,862
Total salaries	$14,176,100	$13,721,992	$12,446,512	$11,943,142	$14,106,128	$16,121,991	$14,920,503	$12,194,075	$9,882,656	$7,892,830
Retirement costs	$858,700									
Southeastern Power Administration:										
Number of employees	36	35	34	33	50	82	56	33	13	
Total salaries	$204,925	$189,168	$178,401	$194,918	$251,252	$295,896	$198,719	$111,712	$18,388	
Retirement costs	$13,000									
Southwestern Power Administration:										
Number of employees	140	131	114	112	169	248	300	290	282	59
Total salaries	$769,649	$700,969	$639,369	$676,420	$1,089,193	$1,304,626	$1,338,715	$1,205,953	$658,911	$301,460
Retirement costs	$50,000									
Total, Department of the Interior:										
Number of employees	56,749	55,731	53,885	54,835	57,467	59,073	60,227	63,449	64,755	57,691
Total salaries	$265,947,892	$251,738,836	$239,959,014	$232,014,627	$238,540,022	$245,793,806	$236,363,590	$220,178,079	$195,262,902	$166,050,692
Retirement costs	$15,448,990									

Mr. KIRWAN. Thank you, gentlemen. We were glad to have you with us.

Mr. BEIRNE. Thank you.

TUESDAY, JUNE 24, 1958.

BUREAU OF INDIAN AFFAIRS

WITNESSES

ARTHUR O. ALLEN, ACTING ASSISTANT COMMISSIONER
ROBERT J. TRIER, CHIEF, BRANCH OF ROADS
J. LEONARD NORWOOD, BUDGET OFFICER

ROAD CONSTRUCTION AND MAINTENANCE (LIQUIDATION OF CONTRACT AUTHORIZATION)

Status of unfunded contract authorization

	Presently available	Revised estimate	Difference
Unfunded balance at beginning of year	$14,685,071	$14,685,071	
Unfunded balance at end of year	−6,685,071	−2,685,071	+$4,000,000
Appropriation to liquidate contract authorization	8,000,000	12,000,000	+4,000,000

Mr. KIRWAN. We have Mr. Allen with us this morning in connection with a request of the Bureau of Indian Affairs.

Do you have a statement, Mr. Allen?

Mr. ALLEN. Yes, sir.

Mr. KIRWAN. You may proceed.

Mr. ALLEN. Mr. Chairman and members of the committee. The supplemental estimate of $4 million for liquidation of contract authority will provide funds to meet cash requirements of our accelerated roads construction program. This need for $4 million for liquidation of contract obligations results from actions taken subsequent to the submission of our 1959 budget estimates. Early in March a budgetary reserve of $1,122,000 in contract authority was made immediately available for obligation, and in addition, $2 million of our 1959 contract authorization was advanced to fiscal year 1958. Later a language provision in our estimate which would have rescinded $3,622,000 of contract authority under the Federal-Aid Highway Act of 1956 was eliminated from the Interior Department Appropriation Act.

All of these factors enabled us to greatly accelerate our 1958 program and increased the need for cash to liquidate outstanding obligations during fiscal year 1959. The latest reports from our operating areas in the field indicate that cash balances on hand and in the 1959 Appropriation Act are not sufficient to cover contractors' earnings through 1959, and it is for this purpose that we are requesting the supplemental appropriation of $4 million. This will make available a total appropriation of $12 million for fiscal year 1959, the same amount as appropriated for fiscal year 1958.

We shall be pleased to answer any further questions you may have on this request.

Mr. KIRWAN. Does that complete your statement?
Mr. ALLEN. That is right.

JUSTIFICATION MATERIAL

Mr. KIRWAN. We will insert the item on page 19 of House Document 394 and the justification in the record.
(The material follows:)

"BUREAU OF INDIAN AFFAIRS

"ROAD CONSTRUCTION AND MAINTENANCE (LIQUIDATION OF CONTRACT AUTHORIZATION)

"For an additional amount for 'Road construction and maintenance (liquidation of contract authorization)', $4,000,000, to remain available until expended."

This proposed supplemental appropriation is required to liquidate contracts entered into pursuant to the authority contained in the Federal-Aid Highway Act, 1956, for roads and trails on Indian reservations. The amount requested will be needed under the recent acceleration of the Indian roads and trails program.

Road construction and maintenance (liquidation of contract authorization), Bureau of Indian Affairs, 1959

Request, to remain available until expended	$4, 000, 000
Appropriation to date	$8, 000, 000
Employment:	
Average number., current appropriation	852
Number involved this estimate	852

PURPOSE AND NEED FOR SUPPLEMENTAL FUNDS

This proposed supplemental appropriation is required to liquidate contracts entered into pursuant to the authority contained in the Federal-Aid Highway Act, 1956, for roads and trails on Indian reservations. The amount requested will be needed under the recent acceleration of the Indian roads and trails program.

JUSTIFICATION

There is a need for an additional amount of $4 million for liquidation of road construction and maintenance contract authorization obligations. This need results from the following actions taken subsequent to the submission of the 1959 budget estimate:

(1) The Interior Department Appropriation Act eliminated the language provision which would have rescinded $3,622,000 of the contract authority available under the Federal-Aid Highway Act, 1956.

(2) A budgetary reserve for 1958 of $1,122,000 of contract authority was made immediately available for obligation during the latter part of the 1958 fiscal year.

(3) Under authority of the Federal-Aid Highway Act, 1956, there was advanced to fiscal year 1958 $2,000,000 of contract authority previously programed for fiscal year 1959.

As a result of the above actions, it will be necessary in order to meet the cash requirements of the accelerated construction program that an additional $4 million be appropriated for fiscal year 1959 for liquidation of contract authorization. This will make available a total appropriation of $12 million for fiscal year 1959, the same amount as appropriated for fiscal year 1958.

ROAD CONSTRUCTION PROGRAM

Mr. KIRWAN. The road construction program has recently been accelerated. What is the extent of this speedup and what major projects are involved?

Mr. ALLEN. We have Mr. Trier with us today, the Chief of the Roads Branch, and he will answer the question for you.

CONTRACT AUTHORITY ADVANCED FROM 1959

Mr. TRIER. The acceleration of the program in this fiscal year was in the amount of $2 million which was advanced from 1959 fiscal year. The funds are allocated to area offices throughout the United States, mostly in the Western States. The largest amounts are being spent in the Southwest, in Arizona and New Mexico, where we have the Navaho and Hopi Indians; and in the Dakotas, where we have a large population of Sioux Indians. The Pacific Northwest is also one of the principal areas. Other areas receive lesser amounts.

ADDITIONAL CONTRACT AWARDED

Mr. KIRWAN. Please provide for the record the additional contracts awarded to date under the speedup, showing the amount and date of the award.

Mr. TRIER. We have such a list which we will present.

(The information follows:)

Projects under contract due to $2,000,000 advance of 1959 contract authorization to 1958 fiscal year program

Project	Reservation	Bid approved for contract	Amount
Fort Apache to U. S. 60	Fort Apache	May 13	$378,590
Kayenta North	Navaho	June 18	289,965
Laguna Creek Bridge	do	do	
Ganado-Chinle	do	June 9	443,181
Chinle-Mary Farms Route 8	do	June 19	417,775
Owyhee-Mountain	Western Shoshone	May 5	[1] 500,971
East-West	Fort Totten	June 23	[1] 117,034
Gracemont Bridge	Kiowa	May 14	31,973
Iron Lightning	Cheyenne River	June 23	[1] 105,796
Kyle South	Pine Ridge	June 6	[1] 203,479
Kocer Corner	do	do	
Cedar Creek	Lower Brule	June 23	80,595
Wanblee-East	Pine Ridge	June 6	166,805
Rosebud-Mission	Rosebud	do	68,616
San Juan Bridge	Navaho	June 19	160,000
Wind River	Wind River	June 24	[1] 165,521

[1] Includes regular 1958 funds and advanced 1959 funds.

DECLINE IN CONTRACT PRICES

Mr. KIRWAN. How do contract prices compare with those a year ago?

Mr. TRIER. Our bids have been running on an average of 15 percent below prices of a year ago.

Mr. KIRWAN. About 15 percent below?

Mr. TRIER. Yes.

Mr. KIRWAN. That question is asked because there will be another agency along saying they have to buy land now because prices are going up, so I am glad you are reporting that contract prices are 15 percent below what they were a year ago.

Mr. TRIER. That has been pretty general.

Mr. KIRWAN. Are many bids being received on each project?

Mr. TRIER. We have been receiving on an average of 8 to 10 bids. We have noticed, however, in the very recent past, in the past few

weeks, some of our bids have attracted fewer bidders. That seems to be affected by bidding on major interstate prime contracts.

DETERMINATION OF PRIORITY

Mr. KIRWAN. On what bases are the order of priority set up as to which roads will be constructed first?

Mr. TRIER. We have a system which was developed by the Automotive Safety Foundation for determining road needs, and also we make road surveys and work with Indian councils and producers of such resources as oil and uranium, and work on roads for those projects most critically needed.

We also place heavy stress on building roads needed to get children to school. This applies particularly in the Navajo area where we have a serious road problem for getting children to school.

STATUS OF EXPENDITURES

Mr. KIRWAN. All that is necessary is for the committee to appropriate sufficient funds to meet cash expenditures under contracts. As of May 31, 1958, the Bureau still had an unexpended balance of $4,309,000. This, together with the $8 million carried in the regular bill, provides a total of $12,309,000.

Why is this not sufficient to meet the requirements until the first of the year when we can review actual progress under the contracts?

Mr. TRIER. The program was slowed down when a reserve of funds was made, last September, I believe, and it was March when the order came through to speed up the program. In addition to the reserve, $2 million was advanced from the 1959 amount. This gave us a rather short time to get the program going, but during the month of June we will award contracts in excess of $4 million and we will have used up all our contract authority that has been made available to us except for some odds and ends tied up in small force account projects.

Mr. KIRWAN. Then that balance of the contract authority will be obligated by the end of June?

Mr. TRIER. Yes.

Mr. KIRWAN. But when do you need the cash?

Mr. TRIER. These contracts that are awarded in June will start immediately and I would say that the average of our contracts will take 60 to 70 days of work. And of course we make monthly payments to the contractor and a final payment after the job is finished.

CASH REQUIREMENT UNTIL 1959

Mr. KIRWAN. With the $8 million carried in the regular bill, do you not think you could hold off until the first of the year for this request?

Mr. TRIER. We have given that matter very serious consideration and we do not believe we will have sufficient cash with the $8 million.

Mr. KIRWAN. You do not think you will have sufficient cash? What do you think you will need, because the Lord willing, and if we keep our health, we will be coming back here the 1st of January.

Mr. TRIER. Of course we will not need the entire $12 million by the 1st of January.

Mr. KIRWAN. Why could not this wait until you come in for a first supplemental?

Mr. TRIER. My opinion at the present time is that the $8 million provided will not be enough. I would think in order to be safe we would need at least $1.5 million additional to carry us to January.

Mr. KIRWAN. You need $1.5 million?

Mr. TRIER. Yes.

Mr. KIRWAN. So you think what you just stated makes a fair estimation?

Mr. TRIER. Yes.

ACCESS ROADS TO MINES

Mr. JENSEN. Does the Bureau of Indian Affairs build roads to uranium mines, for instance? When a uranium deposit is discovered in Indian territory, does the Bureau of Indian Affairs feel duty bound or do they build roads to those mines?

Mr. TRIER. I presume you are speaking more or less strictly in the sense of the access road to the mine?

Mr. JENSEN. Yes.

Mr. TRIER. Several years ago we received funds for the building of access roads from the Atomic Energy Commission which were used to build roads to mines. However, a great deal of the uranium-hauling traffic falls on our regular road system. We have been spending some money the last few years on the regular road system which carries uranium-hauling traffic. Since receiving money from the Atomic Energy Commission several years ago we have not built a specific access road to a uranium mine which was off our system.

Mr. JENSEN. So you have not expended any of the money which Congress has appropriated to build access roads in Indian territory to any uranium mine or any other sort of a mine?

Mr. TRIER. That is correct.

Mr. JENSEN. You said that the Atomic Energy Commission advanced money or built roads to some of those mines?

Mr. TRIER. Yes. The Atomic Energy Commission had a fund which they turned over to the Bureau of Indian Affairs for the purpose of building access roads. That fund no longer exists but we have not had a case where an access road has been required since that fund ceased to be available.

Mr. JENSEN. Do the mine owners contribute anything to the building of those roads?

Mr. TRIER. I do not believe so.

Mr. JENSEN. You do not believe so?

Mr. TRIER. No, I do not believe so.

Mr. JENSEN. That is fine for the mineowner. I question the obligation of the United States to furnish all the money to build roads to uranium mines free gratis to the owner of the mine. That looks unreasonable to me. I hope that matter will be looked into.

TYPE OF ROADS

What type of roads do you build generally now in Indian territory? Is it mostly black top?

Mr. TRIER. The roads that we build almost always fall in the class of roads that the county would build if it were a normal rural com-

munity. Most of them are built with a gravel surface. However, on heavy traffic roads we find a gravel surface road will not support the traffic and we put black top on our heavily traveled roads.

Mr. JENSEN. The reason I ask that, a number of years ago we were traveling through national parks and most of the park roads were just like a washboard, then occasionally we would come to a very smooth blacktop road for a few miles. So I asked the officials of the Park Service why that was, and they said, "Well, the smooth roads have a 3-inch black top but the rough roads have a 2-inch black top."

I said, "What is the difference in cost?"

They said, "About 20 percent."

I said, "Well, I certainly do not want to be a party to appropriating any more money for 2-inch blacktop roads in national parks or Indian territory. Henceforth I hope you will build nothing but 3-inch blacktop, at least."

Are your blacktop roads 3 inches now?

Mr. TRIER. Black top is sometimes used as a means of stabilizing the base. We have regions where good road materials are not available. For instance, on the Navajo reservations there are long stretches where the only building material available is sand. In order to stabilize the sand subgrade so that a proper surface can be put on it, we find it is advisable to mix some oil for our stabilizing course. Sometimes we find we can get a few years of service out of that preliminary course, and we usually follow it up with what we call plant mix, a 3-inch covering that you speak of.

Mr. JENSEN. But you follow the State of Iowa specifications pretty closely?

Mr. TRIER. Yes. We use specifications developed by the Bureau of Public Roads in cooperation with the Association of State Highway Officials, and they are the same specifications used by the States on State highways.

Mr. JENSEN. Where did you say these roads would be built for which you are asking this money today?

Mr. TRIER. They will be built throughout the United States. We have a few roads in the Eastern part of the country such as in North Carolina, Mississippi, and Florida, but most of them will be in the western part of the United States, the principal areas being in the Dakotas; in the Southwest, Arizona, and New Mexico; and in the Northwest, Washington, Oregon, and Idaho.

STATE PARTICIPATION

Mr. JENSEN. What is the arrangement you have with the States as far as the building of such roads is concerned?

Mr. TRIER. There is a provision in the Federal-Aid Highway Act that permits the State to use 100 percent Federal-aid highway funds when they build roads across a Federal reservation. That applies to an Indian reservation or a military reservation. That is handled by the Bureau of Public Roads in cooperation with the States, and the Bureau of Indian Affairs plays no operative part in that program. Our roadbuilding activity is in the field that the counties ordinarily perform, and ordinarily the States build the State type of roads in the reservations.

Mr. JENSEN. Free of charge to the Indian Service?

Mr. TRIER. Yes.

Mr. JENSEN. Are there not some roads built for which the Indian Service pays in cooperation with the States and counties?

Mr. TRIER. Yes. We have cooperated with the States. In fact, it is a major policy with us to work with the States.

An illustration of what you are asking about came up on the Navajo Indian Reservation, where one of our roads planned to be built along county standards suddenly developed a State highway volume of traffic. We had already made plans and started building. We went to the State of New Mexico and worked out a cooperative plan with them whereby we carried the project through the grading and base course phase and then they stepped in and finished it and took over the maintenance, thereby relieving the Federal Government of all maintenance in the future.

Mr. JENSEN. The State took over the maintenance?

Mr. TRIER. Yes.

Mr. JENSEN. Is that road considered a State road or an Indian territory road?

Mr. TRIER. That road is now in the State highway system of New Mexico.

Mr. JENSEN. I surmised as much.

That is all, Mr. Chairman.

Mr. KIRWAN. Mr. Budge.

FUNDING PROCEDURE

Mr. BUDGE. I would like to have the sequence of events described as to when you obligate funds and when funds are appropriated, just the mechanics of it.

Mr. TRIER. The program starts with the enactment of the Federal-Aid Highway Act, which, as you know, is a biennial act. We are now operating under the Federal-Aid Highway Act of 1956 which authorizes funds for the fiscal years 1958 and 1959. These funds are authorized 1 year in advance of the fiscal year for which they are stipulated. However, as a matter of practice, we have set up the programs for the year for which they were authorized. We departed from that practice this spring when we advanced $2 million of the 1959 authorization to be programed in the 1958 fiscal year.

Mr. BUDGE. Who has control over that, the Secretary?

Mr. TRIER. The funds are authorized in the name of the Secretary of the Interior. The amount is authorized for construction and maintenance. Our budget estimate makes the breakdown as to construction and maintenance.

The Bureau of Indian Affairs then makes an allocation of funds to nine area offices, each covering 2 or 3 States.

Mr. BUDGE. Is that done before the appropriation of the money?

Mr. TRIER. Yes; it is done when the authorization becomes available. We then begin to program the projects.

Mr. BUDGE. In other words, this committee does not have anything to do with it except to pick up the tab after the money has been obligated and the contracts entered into?

Mr. TRIER. That is essentially correct.

Mr. BUDGE. That is what I suspected. I hope, Mr. Chairman, we can get away from that practice. It is becoming all too frequent in the financial affairs of the United States and certainly bypasses the Appropriations Committee and destroys the function for which the committee was created.

Mr. ALLEN. With your permission, I would like to raise a further question in regard to this supplemental. I feel if we have to wait until January to come in for cash on a supplemental, it will slow down our program.

Mr. KIRWAN. I did not say that you would have to wait. I only asked you if you could.

Mr. ALLEN. If we have to wait it will slow down contract awards until sometime late in the fiscal year. I would like Mr. Norwood to analyze the fund situation for the committee.

Mr. NORWOOD. Mr. Chairman, on June 30 we will have some $6 million of unpaid bills—June 30 of this year—with $1.5 million unspent cash. With the $8 million that is in the regular appropriation act that would give us $9.5 million, and after we pay our 1958 bills, we will have only $3.5 million to be applied to contractors' earnings against new contracts that will be let after July 1, between July 1 and the time we could come in for the first supplemental in January.

Mr. KIRWAN. You will have only $3.5 million left?

Mr. NORWOOD. Yes, that could be applied to contractors' earnings against new contracts.

Mr. KIRWAN. After July 1?

Mr. NORWOOD. Yes.

Mr. BUDGE. Could I comment on that? That arises because of the fact that you changed the policy within the department and advanced $2 million which should have been used in 1959; is that right? In other words, you are $2 million ahead of where you figured to be when you presented your statement up here in support of the regular budget.

Mr. NORWOOD. That is right, sir; we have advanced $2 million from 1959 to the 1958 program.

Mr. KIRWAN. That is all.

JUNE 24, 1958.

FISH AND WILDLIFE SERVICE

BUREAU OF SPORT FISHERIES AND WILDLIFE

WITNESSES

ABRAM V. TUNISON, ASSISTANT DIRECTOR
W. E. CORBIN, CHIEF, DIVISION OF ADMINISTRATION

MANAGEMENT AND INVESTIGATIONS OF RESOURCES

Program and financing

	Presently available	Revised estimate	Difference
Program by activities:			
1. Management of fishery resources	$4,154,000	$4,154,000	----------
2. Extension and training	155,000	155,000	----------
3. Fishery research	444,000	444,000	----------
4. Administration of wildlife resources:			
(a) Definite	3,078,000	3,403,625	+$325,625
(b) Indefinite	154,000	154,000	----------
5. Control of predatory animals and injurious rodents	1,900,000	1,900,000	----------
6. Wildlife research	907,000	907,000	----------
7. Soil and moisture conservation	195,000	195,000	----------
8. River basin studies	783,000	783,000	----------
Total obligations	11,770,000	12,095,625	+325,625
Financing: Appropriations (new obligational authority):			
Definite	11,616,000	11,941,625	+325,625
Indefinite	154,000	154,000	----------

Object classification

	Presently available	Revised estimate	Difference
Total number of permanent positions	1,441	1,443	+2
Full-time equivalent of all other positions	228	228	----------
Average number of all employees	1,599	1,600	+1
Number of employees at end of year	2,132	2,134	+2
01 Personal services:			
Permanent positions	$6,738,835	$6,746,235	+$7,400
Positions other than permanent	1,034,600	1,034,600	----------
Other personal services	145,690	147,540	+1,850
Total personal services	7,919,125	7,928,375	+9,250
02 Travel	490,800	531,300	+40,500
03 Transportation of things	77,800	84,500	+6,700
04 Communication services	77,900	84,100	+6,200
05 Rents and utility services	141,700	143,300	+1,600
06 Printing and reproduction	40,400	43,400	+3,000
07 Other contractual services	562,600	608,950	+46,350
08 Supplies and materials	1,305,125	1,484,650	+179,525
09 Equipment	394,100	426,100	+32,000
10 Lands and structures	352,000	352,000	----------
11 Grants, subsidies, and contributions	516,150	516,650	+500
13 Refunds, awards, and indemnities	3,500	3,500	----------
15 Taxes and assessments	17,400	17,400	----------
Subtotal	11,898,600	12,224,225	+325,625
Deduct charges for quarters and subsistence	128,600	128,600	----------
Total obligations	11,770,000	12,095,625	+325,625

Mr. KIRWAN. We will now take up the Bureau of Sport Fisheries and Wildlife.

Do you have a statement, Mr. Tunison?

Mr. TUNISON. I have a statement that I can submit for the record.

Mr. KIRWAN. Your statement will be inserted in the record at this point.

(The statement referred to follows:)

STATEMENT OF ABRAM V. TUNISON, ASSISTANT DIRECTOR, BUREAU OF SPORT FISHERIES AND WILDLIFE

Mr. Chairman, and members of the committee, the supplemental estimate for "Management and investigations of resources," Bureau of Sport Fisheries and Wildlife, totals $325,625, of which $25,000 is required to enable the Bureau to carry out its responsibilities in connection with new oil and gas regulations for Alaska approved by the Secretary of the Interior on January 8, 1958, and $300,625 is required for administration of the Alaska game law.

Alaska's first commercially producing oil well was discovered on July 23, 1957, on the Kenai National Moose Range. Preliminary work by the major oil companies shows this area has great oil potentialities. All the major oil companies have lease applications on the area. The refuge manager at Kenai has been appointed the authorized departmental officer to deal with the companies. He must have available a staff to give full time to the needs of the oil companies and to see that they observe the strict stipulations the Secretary has approved to prevent and suppress the hazards from forest fires which will accompany this work, to approve the operating plans and the road systems of the oil companies, to be available on short notice for consultation with the production units of the various oil companies, to handle the influx of workers coming into the area, and to prevent violations of the regulations protecting the refuge. There are already 2,500 oilworkers in the area and more to come. Likewise, the public visitation is increasing because of the roads which the oilfield developers construct.

The Bureau must protect the wildlife values of the area during this development. Present funds and staffing are inadequate to provide the protection required. The $25,000 requested will provide $9,250 for personal services and $15,750 for expenses, including purchase of a jeep and $5,000 for aircraft rental in patrol of the area.

With respect to the item of $300,625 this committee considered and approved a budget of $504,625 for administration of the Alaska game law. This amount was made up of $50,000 of annual appropriation and $454,625 of indefinite funds, representing 12½ percent of the estimated proceeds from sales of fur sealskins and byproducts from the Pribilof Islands in the fiscal year 1958. This estimate of proceeds from sales has proved to be too high and it is now apparent that only $154,000 will materialize from this source, leaving a deficit of $300,625. This deficit is due to the fact that prices received for sealskins at the October 1957 sale were approximately 20 percent lower than had been estimated and because a strike at the Fouke Fur Co. plant in St. Louis, where the skins were processed and sold, necessitated postponement of the auction sale scheduled for mid-April of 1958. Although the strike has recently been settled and the sale was held on June 7, this will not result in any additional funds being covered into the Treasury this fiscal year. Consequently, only those revenues which have accrued to date will be available in the fiscal year 1959. These revenues amount to $1,231,968.92; 12½ percent of $1,231,968.92 equals $153,996 which has been rounded to $154,000. Operations in Alaska are financed at a minimum level and it is urgent that the amount of $300,625 be appropriated to make up the deficiency in receipts.

REDUCTION IN PRIBILOF RECEIPTS

Mr. TUNISON. This consists of two items. One is with regard to the Pribilof receipts. The spring sale had to be postponed because of a strike at the Fouke Fur Co. plant in St. Louis and the receipts will not be available to us. The amount of that is $300,625.

SUPERVISION OF OIL LEASES

The other item involved is in Alaska, and it results from the oil development in the Kenai Peninsula. We are requesting $25,000 to

enable us to supervise the protective interests for wildlife in connection with the oil development.

JUSTIFICATION MATERIAL

Mr. KIRWAN. We will insert the item on page 20 of the House Document 394 and the justification in the record at this point.

(The item and justification follow:)

"FISH AND WILDLIFE SERVICE

"BUREAU OF SPORT FISHERIES AND WILDLIFE

"Management and Investigations of Resources

"For an additional amount for 'Management and investigations of resources,' $325,625."

This proposed supplemental appropriation is needed to provide increased staff to administer oil well leasing regulations on the Kenai Refuge in Alaska and administration of the Alaska game laws. The need for an additional staff at the Kenai Refuge has been precipitated by the recent discovery of oil on that refuge. The need for additional funds to support the Alaska game law activity is caused by the drop in sealskin receipts due to (1) a decline in sealskin prices and (2) a postponement of the current spring auction due to a strike at the company which prepares the skins.

Management and investigations of resources

Request for 12 months from July 1, 1958, to June 30, 1959	$325, 625
Appropriation to date	11, 616, 000
Employment:	
Average number, current appropriations	1, 599
Number involved this estimate	1
Budget estimate next fiscal year	None

PURPOSE AND NEED FOR SUPPLEMENTAL FUNDS

The amount of $300,625 is requested to maintain in 1959 the 1958 level of operations for the subactivity "Administration of Alaska game law," as contemplated in the 1959 budget. The budget contemplated an annual appropriation for this subactivity of $50,000 and $454,625 of indefinite funds which represent 12½ percent of the estimated proceeds from sales of fur sealskins and by-products during fiscal year 1958. This estimate has proved too high and it is now apparent that only $154,000 will materialize from this source, leaving a deficit of $300,625.

The remainder of this request, $25,000, is to enable the Bureau to carry out it's responsibilities in connection with the new oil and gas regulations for Alaska approved by the Secretary of the Interior, January 8, 1958. A full-time staff is needed in Alaska for inspection and assistance to private oil companies in their operations with the primary objective of preserving wildlife values.

JUSTIFICATION

Management and investigations of resources

	Presently available	Revised estimate	Difference
4. Administration of wildlife resources:			
(a) Wildlife refuges	$2, 620, 000	$2, 645, 000	+$25, 000
(b) Enforcement of Migratory Bird and Lacey Acts	408, 000	408, 000	
(c) Administration of Alaska game law:			
Definite	50, 000	350, 625	+300, 625
Indefinite	154, 000	154, 000	
Total	3, 232, 000	3, 557, 625	+325, 625

(*a*) *Wildlife refuges, $25,000.*—This amount is requested to provide a full-time staff to enable inspection of oil company operations and to assist them in the conduct of operations so as to give the maximum protection to wildlife values.

Alaska's first commercially producing oil well was discovered on July 23, 1957, on the Kenai National Moose Range. The Secretary of the Interior approved new oil and gas regulations opening this refuge to oil and gas development on January 8, 1958.

Preliminary work by the major oil companies shows this to be one of the greatest potential fields ever discovered on the North American Continent. All the major oil companies have lease applications on the area. The Bureau is required to protect the wildlife values of the area during this development. Present funds and staffing are inadequate to provide the protection required.

The refuge manager at Kenai has been appointed the authorized departmental officer to deal with the companies. He must have available a staff to give full time to the needs of the oil companies and to see that they observe the strict stipulations the Secretary has approved to prevent and suppress the hazards from forest fires which will accompany this work, to approve the operating plans and the road systems of the oil companies, to be available on short notice for consultation with the production units of the various oil companies, to handle the vast influx of workers coming into the area, and to prevent violations of the regulations protecting the refuge. There are already 2,500 oil workers in the area and more to come. Likewise, the public visitation is increasing because of the roads which the oilfield developers construct.

The supplemental amount requested will provide for 2 positions, plus $15,750 for equipment and expenses.

(*c*) *Administration of Alaska game law (definite), $300,625.*—This amount is requested to maintain in 1959 the 1958 level of operations as contemplated in the 1959 budget. The budget contemplated an annual appropriation for this subactivity of $50,000 and $454,625 of indefinite funds which represents 12½ percent of the estimated proceeds from sales of fur sealskins and byproducts during fiscal year 1958. This estimate has proved too high and it is now apparent that only $154,000 will materialize from this source, leaving a deficit of $300,625.

The sale prices at the October 1957 sale were approximately 20 percent lower than estimated. Since that time, a strike has occurred at the Fouke Fur Co. plant in St. Louis which has only recently been settled. This necessitated postponement of the auction sale originally scheduled for mid-April of 1958. Although the sale is now scheduled for June 7 this will not result in any additional funds being covered into the Treasury this fiscal year. Consequently, only those revenues which have accrued to date will be available in the fiscal year 1959. These revenues amount to $1,231,968.92, made up of $1,175,499.03 from sale of fur sealskins and $56,469.89 from sale of byproducts. On this basis the supplemental estimate is calculated as follows:

Estimated receipts in budget supporting pending appropriation act, 12½ percent of $3,637,000	$454,625
Receipts based on sales made to date, 12½ percent of $1,231,968.92 equals $153,996, rounded to	154,000
Amount of supplemental estimate	300,625

ABSORPTION OF $25,000 REQUEST

Mr. KIRWAN. $25,000 is requested to provide 2 employees to inspect oil company operations in Alaska.

Over $11,600,000 has just been provided in the 1959 act for the Bureau. Why cannot this little item be taken care of without asking the committee for a special appropriation? It seems to me that you should be able to absorb a couple of employees with an appropriation of over $11,600,000.

Mr. TUNISON. There seem to be many items we are faced with absorbing. I am sure you are aware of the importance of the refuge system. Inasmuch as the need for this additional work was created specifically by the discovery of oil, we thought it was only fair to request funds for that specific purpose.

Mr. KIRWAN. In the bill that we just passed we allowed increases totaling $45 million more than was asked for. We went $45 million above the President's budget request. What would have happened if these programs had not received that $45 million?

Mr. TUNISON. You are right, sir.

That did not all come to our Bureau.

Mr. KIRWAN. Certainly not, but your Bureau got a big part.

Mr. TUNISON. We got some increases.

Mr. KIRWAN. Not only some increases; you were given enough money to finish all of the fish hatcheries under construciton in the United States and to start some new ones. Stop and visualize this situation, if you will. The Congress gave you over $2,500,000 more than you asked for and you are in here in 2 months wanting $25,000. What would have become of you if you had not gotten that large increase? Let me give you a little warning. This is the thing that gets under my hide. Surely $25,000 could be picked up out of the money you were given.

FUNDS FOR ADMINISTRATION OF ALASKA GAME LAW

Three hundred thousand, six hundred and twenty-five dollars is requested for administration of the Alaska game law due to lower receipts from sales of fur sealskins than estimated.

How much of this is due to lower prices than expected?

Mr. CORBIN. The final counting is not in yet, but roughly 12½ percent is about $147,000 short of our estimate.

Mr. KIRWAN. You say that you are short that much now?

Mr. CORBIN. The low prices at the 2 sales, the 1 that occurred in June and the 1 that occurred in October, accounted for it.

Mr. KIRWAN. You say that there was a strike that delayed the sales?

Mr. CORBIN. There was a strike that delayed the sales.

Mr. KIRWAN. And the sales are not up to par?

Mr. CORBIN. That is right. There is about a 15- or 20-percent reduction in average sales.

PROPAGATION OF CHANNEL CATFISH

Mr. KIRWAN. I have recently had an inquiry about channel catfish. How successful has your research program been with regard to improving techniques for the propagation of channel catfish?

Mr. TUNISON. We feel that we have made considerable progress in that regard. This program has been financed from Saltonstall-Kennedy funds for 3 years. It has been confined to perfecting methods of propagation of channel catfish for use both by commercial hatcheries as well as sport fish hatcheries.

One very outstanding piece of research in regard to the channel catfish was the perfecting of the use of pituitary glands in hastening the spawning of the catfish. It has become very artificial, and by the use of these pituitary glands we can almost guarantee a spawning within a certain period of time.

Mr. KIRWAN. The reason I bring the matter up is that there is a big demand for channel catfish for the stocking of Ohio waters. It

is my understanding that the fishery authorities of the State of Ohio are very anxious for the Fish and Wildlife Service to propagate this species at the Senecaville and Hebron hatcheries. Do you have the facilities at these hatcheries for the propagation of channel catfish?

Mr. TUNISON. We need more facilities than we have at those two hatcheries. Both of those hatcheries were designed for bass and sunfish propagation. In the case of channel catfish, with our present knowledge, their propagation is a combination between a trout culture and a warm-water culture. As a result of that we would, in order to do it efficiently, require some additional raceways.

Mr. KIRWAN. What would it cost?

Mr. TUNISON. At Senecaville it would run into the neighborhood of $50,000.

Mr. KIRWAN. I think that you should take care of this requirement because we are paying in Ohio nearly $6 billion a year in taxes. I can understand that the water in Ohio is not the best in the world, but a catfish could live in oil. I think that you could raise them in the streams there, and I believe you should put a little money into those two fish hatcheries.

Mr. JENSEN. I want to say in connection with what the chairman has said about fish hatcheries, I long ago came to the conclusion that the money that is spent by the Fish and Wildlife Service for fish hatcheries and for improvements in fish hatcheries is money very well spent. I do not think there is any money that Congress spends that we get more return on.

Mr. TUNISON. Thank you, sir.

Mr. JENSEN. We build fish hatcheries for a normal amount, and from those hatcheries we raise millions and millions of fish every year. Those fish are deposited in the streams and lakes of our country and they grow into fish of every size. They furnish a lot of food besides the sport of fishing. This committee has always been very liberal in appropriating money for fish hatcheries for the very reasons that I have mentioned. The old adage is, you take a boy hunting and fishing and you never have to go hunting for your boy. There is not such a thing as childhood delinquency among children of parents who take their children hunting and fishing. This committee has been cognizant of that fact. That is another reason why this committee has been quite liberal in appropriating money for the fish hatcheries. I know that Mr. Kirwan is completely justified in asking that money be spent in his State for research. In fact, I have been quite surprised that more fish hatcheries were not built in the State of Ohio, or my State of Iowa. It just appears to be after all of these years on this committee that this is about the best money that we spend in the whole Interior Department.

REQUESTS SHOULD BE INCLUDED IN REGULAR BUDGET

Mr. Kirwan often says the money we spend here is for America, for the development of our natural resources. It is an interesting experience to sit on this committee, and I want to compliment the agencies of the Interior Department that come before this committee for their devotion to duty. I am one of the fellows who thinks that you people should not follow this practice which too many of the agencies of the Interior Department, and other agencies of Govern-

ment have followed, in not putting your requests in the general appropriation bill. After we pass the general appropriation bill here comes the supplementals. It is most difficult for us to understand why that procedure is followed. This job of sitting on this committee and going through all of these thousands of items in the general appropriation bill is a difficult one, and we are always hoping—now, this is the end of it. Then we pass the general appropriation bill. My gosh, the first thing you know here comes the supplemental. Put yourselves in our place.

All of the agencies of the Department appearing before us today are asking $37,340,050 over and above what we appropriated in the general bill, and as Mr. Kirwan said, we went above the budget by $45 million. So I hope that you gentlemen will understand the responsibility we have when the country and the people are pretty heavily burdened with taxes. They look at us and say, "My, do they not ever try to save a dime?" But it is going on and on. We have lectured and we have talked and pleaded with the departments, asking them to get all their requests in the general bill, but instead of heeding our pleading these supplementals are getting worse and worse every year. Some are justified, there is no question about it. I can understand that, but I hope henceforth you will try to anticipate what you are going to need so you will not have to come up here and ask for these supplementals in such great amounts as every department is asking for this year.

SALE OF SEALSKINS DELAYED

Mr. BUDGE. Does your problem here arise from the fact that the second sale was late?

Mr. TUNISON. Yes. It was scheduled for April and because of the strike it had to be postponed until June. It was something over which we had no control.

Mr. BUDGE. When will the money be recovered into the Treasury?

Mr. CORBIN. The sale was made on June 7, and the company has 60 days in which to make the remittance. It will probably be around July 15.

Mr. BUDGE. If it had been made prior to July 1, you would have no problem?

REDUCED PRICES OF SEALSKINS

Mr. CORBIN. We would have a problem, yes, because the sales were about 20 percent below our estimate. We would have a smaller problem. In other words, we came out $147,000 short on account of reduced prices of sealskins.

Mr. JENSEN. $147,000 short? What will your total sales be for this year?

Mr. CORBIN. Including the June sales it will come to about $2,400,000. Those are gross sales.

Mr. JENSEN. Is that with the reduction in your anticipated sales that Mr. Kirwan talked about a minute ago? What does that amount to, percentagewise?

Mr. CORBIN. At the October sale the average was $68.98 a skin as compared with an estimated $94 skin, and at the June 7 sale the

average was $71.27, and that compared with $94 that we estimated. In making up our estimate we used the prior 4 previous sales' average and arrived at the average of $94. In October there was approximately a 20-percent reduction.

Mr. JENSEN. How did the number of skins compare with previous years?

Mr. CORBIN. The Bureau of Commercial Fisheries handles that, and I do not have the exact figures here. They are about the same.

Mr. KIRWAN. We are happy to have had you with us today.

TUESDAY, JUNE 24, 1958.

FISH AND WILDLIFE SERVICE

BUREAU OF COMMERCIAL FISHERIES

WITNESSES

ANDREW W. ANDERSON, ASSISTANT DIRECTOR
RALPH C. BAKER, CHIEF, DIVISION OF RESOURCE MANAGEMENT
HAROLD E. CROWTHER, CHIEF, DIVISION OF INDUSTRIAL RESEARCH AND SERVICES
JOHN R. GARDNER, CHIEF, BRANCH OF BUDGET AND ADMINISTRATIVE MANAGEMENT

MANAGEMENT AND INVESTIGATIONS OF RESOURCES

Program and financing

	Presently available	Revised estimate	Difference
Program by activities:			
1. Management	$135,100	$135,100	----------
2. Marketing and technology	1,312,250	1,437,250	+$125,000
3. Research	3,008,000	3,008,000	----------
4. Research on fish migration over dams	273,000	273,000	----------
5. Administration of Alaska Fisheries:			
(*a*) Definite	1,137,650	1,438,275	+300,625
(*b*) Indefinite	154,000	154,000	----------
Total obligations	6,020,000	6,445,625	+425,625
Financing: Appropriation (new obligational authority):			
Definite	5,866,000	6,291,625	+425,625
Indefinite	154,000	154,000	----------

Object classification

	Presently available	Revised estimate	Difference
Total number of permanent positions	613	643	+30
Full-time equivalent of all other positions	111	111	
Average number of all employees	690	704	+14
Number of employees at end of year	800	800	
01 Personal services:			
Permanent positions	$3,164,869	$3,228,044	+$63,175
Positions other than permanent	549,025	549,025	
Other personal services	157,206	157,206	
Total personal services	3,871,100	3,934,275	+63,175
02 Travel	231,000	276,900	+45,900
03 Transportation of things	53,000	66,300	+13,300
04 Communication services	92,000	107,725	+15,725
05 Rents and utility services	59,000	68,600	+9,600
06 Printing and reproduction	58,000	70,700	+12,700
07 Other contractual services	702,000	812,900	+110,900
08 Supplies and materials	602,000	718,100	+116,100
09 Equipment	125,000	158,800	+33,800
10 Lands and structures	6,500	6,500	
11 Grants, subsidies, and contributions	210,900	215,000	+4,100
13 Refunds, awards, and indemnities	200	200	
15 Taxes and assessments	16,175	16,500	+325
Subtotal	6,026,875	6,452,500	+425,625
Deduct charges for quarters and subsistence	6,875	6,875	
Total obligations	6,020,000	6,445,625	+425,625

Mr. KIRWAN. We will now take up the Bureau of Commercial Fisheries.

Mr. ANDERSON. The Director, Mr. McKernan, is in the Pacific Northwest on his way to Alaska. He has a statement here which is brief and which I can submit for the record.

Mr. KIRWAN. The statement will be inserted in the record at this point.

(The statement referred to follows:)

STATEMENT OF DONALD L. MCKERNAN, DIRECTOR, BUREAU OF COMMERCIAL FISHERIES

Mr. Chairman, and members of the committee, the supplemental estimate for "Management and investigations of resources," Bureau of Commercial Fisheries, totals $425,625, of which $125,000 is required to enable the Bureau to finance inspection and certification services to be performed in connection with functions recently transferred from the Department of Agriculture to the Department of the Interior, and $300,625 is required for administration of Alaska fisheries.

Pursuant to the authorization contained in section 6 (a) of the Fish and Wildlife Act of 1956, all functions under the Agricultural Marketing Act of 1946 pertaining to fish, shellfish, and any products thereof, have been transferred from the Department of Agriculture to the Department of the Interior.

Under this transfer of functions the Department of the Interior acquired the authority to promulgate voluntary standards and inspect and certify fish, shellfish, and any products thereof. The inspection and certification service has been conducted by the Department of Agriculture on a fee basis approximating the cost of the service, and the Bureau proposes to continue this procedure. The Department of Agriculture has followed the practice of depositing fees collected in a trust fund and paying the salaries and expenses pertaining to the service from such fund. The Bureau also proposes to adopt this practice.

The Bureau has already issued various voluntary standards for certain fish and fishery products and members of the industry engaged in Atlantic and gulf coast operations have urgently requested that the Bureau undertake inspection and certification services under the standards applicable to them by July 1, 1958. It is anticipated that 25 plant and supervisory inspectors will be required for this small segment of the industry.

Although the service is planned on a self-financing basis, it cannot be initiated successfully without financing from Federal funds for approximately 6 months at an estimated cost of $125,000. By this time, sufficient contracts should be in effect and monthly fee collections made in sufficient amounts for a self-sustaining fund. It is estimated that approximately one-half of the $125,000 requested will be required for personal services and the balance for other expenses.

With respect to the $300,625 required for administration of Alaska fisheries, the budget earmarked $1,137,650 of the annual appropriation for this purpose and anticipated that $454,625 of indefinite funds representing 12½ percent of the estimated proceeds from sales of fur sealskins and byproducts from the Pribilof Islands in the fiscal year 1958 would be available. This estimate of proceeds from sales has proved to be too high and it is now apparent that only $154,000 will materialize from this source, leaving a deficit of $300,625. This deficit is due to the fact that prices received for sealskins at the October 1957 sale were approximately 20 percent lower than had been estimated and because a strike at the Fouke Fur Co. plant in St. Louis, where the skins are processed and sold, necessitated postponement of the auction sale scheduled for mid-April of 1958. Although the strike has recently been settled and the sale was held on June 7 this will not result in any additional funds being covered into the Treasury this fiscal year. Consequently, only those revenues which have accrued to date will be available in the fiscal year 1959. These revenues amount to $1,231,968.92, made up of $1,175,499.03 from sale of fur sealskins and $56,469.89 from sale of byproducts; 12½ percent of $1,231,968.92 equals $153,996 which has been rounded to $154,000. Inasmuch as it had been estimated that $454,625 would be available and only $154,000 will be realized, the need for the $300,625 in question is urgent. The appropriation of this additional amount will permit of operation in 1959 at the 1958 level.

Mr. Anderson. We have two requests. One request is similar to the one that you have already heard, $300,625 to permit us to manage the Alaska fisheries resources at the same level as for fiscal 1958. The deficiency occurs because of the lower price for fur, sealskins, and the strike that you have just heard about.

The second request is for $125,000. It developed from a transfer of functions from the Department of Agriculture to the Department of the Interior in connection with providing standards and inspection for the domestic fishing industry. It will take that amount to initiate the program, after which it will be self-supporting on a fee basis from the industry.

JUSTIFICATION MATERIAL

Mr. Kirwan. We will insert in the record the item on page 21 of House Document 394 and the justifications.

(The item and the justifications follow:)

"Bureau of Commercial Fisheries

"Management and Investigations of Resources

"For an additional amount for 'Management and investigations of resources', $425,625."

On March 22, 1958, the Director of the Bureau of the Budget, under the authority of section 6 (a) of the Fish and Wildlife Act of 1956, transferred from the Department of Agriculture to the Department of the Interior the voluntary grading program for fishery products. An amount of $125,000 is necessary to train inspectors in order to initiate the program which will henceforth be financed by a reimbursable revolving fund. The remaining $300,625 is needed to replace the recent estimated loss of sealskin receipts used to partially finance the administration of Alaska fisheries activity. The loss of these receipts is due to (1) a decline in sealskin prices and (2) postponement of the spring auction due to a strike at the company which prepares the skins.

Management and investigations of resources

Request (for 12 months from July 1, 1958, to June 30, 1959)	$425,625
Appropriation to date	$5,866,000
Obligations	None
Expenditures	None
Employment:	
Average number, current appropriation	690
Number involved this estimate	14
Budget estimate next fiscal year	None

PURPOSE AND NEED FOR SUPPLEMENTAL FUNDS

The amount of $300,625 is requested to maintain in 1959 the 1958 level of operations for the subactivity "Administration of Alaska fisheries" as contemplated in the 1959 budget. The budget contemplated an annual appropriation for this subactivity of $1,137,650 and $454,625 of indefinite funds which represents 12½ percent of the estimated proceeds from sale of fur sealskins and byproducts during fiscal year 1958. This estimate has proved too high and it is now apparent that only $154,000 will materialize from this source, leaving a deficit of $300,625.

The remainder of this request, $125,000, is to finance for approximately 6 months' inspection and certification services to be performed in connection with functions recently transferred to the Department of the Interior by Bureau of the Budget determination (23 F. R. 2304). It is planned that the services to be provided will be in a self-financing basis after approximately a 6-months' period.

JUSTIFICATION

Management and investigations of resources

	Presently available	Revised estimate	Difference
2. Marketing and technology:			
(*a*) Economics	$48,000	$48,000	----------
(*b*) Exploratory fishing and gear development	410,250	410,250	----------
(*c*) Market news	320,000	320,000	----------
(*d*) Statistics	186,000	186,000	----------
(*e*) Technology	348,000	473,000	+$125,000
Total	1,312,250	1,437,250	+125,000

(*e*) *Technology, $125,000.*—The $125,000 requested is to finance for approximately 6 months inspection and certification services to be performed in connection with the functions recently transferred to the Department of the Interior by Bureau of the Budget determination (23 F. R. 2304). It is planned that the services to be provided will be on a self-financing basis after approximately a 6-month period.

Pursuant to section 6 (a) of the Fish and Wildlife Act of 1956 (16 U. S. C. 742e), the Bureau of the Budget determined (23 F. R. 2304), that all functions under the Agricultural Marketing Act of 1946 (7 U. S. C. 1621 et seq.), pertaining to fish, shellfish, and any products thereof, including but not limited to the development and promulgation of grade standards, the inspection and certification, and improvement of transportation facilities and rates for fish and shellfish and any products thereof, were transferred from the Department of Agriculture to the Department of the Interior.

Under this transfer of functions the Department of the Interior acquired the authority to promulgate voluntary standards and inspect and certify fish, shellfish, and any products thereof. The inspection and certification service has been conducted by the Department of Agriculture on a fee basis approximating the cost of the service and the Bureau proposes to continue this procedure. The Department of Agriculture has followed the practice of depositing fees collected in a trust fund and paying the salaries and expenses pertaining to the service from such fund. The Bureau also proposes to adopt this practice.

The Bureau has already issued various voluntary standards for certain fish and fishery products and members of the industry engaged in Atlantic and

gulf coast operations have urgently requested that the Bureau undertake inspection and certification services under the standards applicable to them by July 1, 1958. It is anticipated that 25 plant and supervisory inspectors will be required for this small segment of the industry.

Although the service is planned on a self-financing basis, it cannot be initiated successfully without financing from Federal funds for approximately 6 months at an estimated cost of $125,000. By this time, sufficient contracts should be in effect and monthly fee collections made in sufficient amounts for a self-sustaining fund.

	Presently available	Revised estimate	Difference
5. Administration of Alaska fisheries:			
Definite	$1,137,650	$1,438,275	+$300,625
Indefinite	154,000	154,000	
Total	1,291,650	1,592,275	+300,625

Administration of Alaska Fisheries (definite), $300,625. This amount is requested to maintain in 1959 the 1958 level of operations as contemplated in the 1959 budget. The budget contemplated an annual appropriation for this subactivity of $1,137,650 and $454,625 of indefinite funds which represents 12½ percent of the estimated proceeds from sales of fur sealskins and byproducts during fiscal year 1958. This estimate has proved too high and it is now apparent that only $154,000 will materialize from this source, leaving a deficit of $300,625.

The sale prices at the October 1957 sale were approximately 20 percent lower than estimated. Since that time, a strike has occurred at the Fouke Fur Co. plant in St. Louis which has only recently been settled. This necessitated postponement of the auction sale originally scheduled for mid-April of 1958. Although the sale is now scheduled for June 7 this will not result in any additional funds being covered into the Treasury this fiscal year. Consequently, only those revenues which have accrued to date will be available in the fiscal year 1959. These revenues amount to $1,231,968.92, made up of $1,175,499.03 from sale of fur sealskins and $56,469.89 from sale of byproducts. On this basis the supplemental estimate is calculated as follows:

Estimated receipts in budget supporting pending appropriation act, 12½ percent of $3,637,000	$454,625
Receipts based on sales made to date, 12½ percent of $1,231,968.92 equals $153,996, rounded to	154,000
Amount of supplemental estimate	300,625

INSPECTION AND CERTIFICATION SERVICES

Mr. KIRWAN. $125,000 is requested for inspection and certification services for fish and shellfish.

Please tell us when this function was transferred from the Department of Agriculture and explain just what these services consist of, and where they will be performed.

Mr. ANDERSON. The transfer of functions will become official on July 1. The inspection service is a service that is performed throughout the country wherever it is requested by the domestic fishing industry. Currently, there are about seven plants in New England and in the Midwest which receive this inspection. We have requests which we believe are firm from 15 to 20 shrimp plants throughout the gulf area. They will request inspection as promptly as we can initiate it. The funds we require are to assemble the new inspectors, to train them, to supervise them, and to get the program underway.

We will receive no money back from the industry for 2 months or more after the inspections actually start.

Mr. KIRWAN. The Department of Agriculture has financed this service from fees under a trust fund arrangement.

What is the status of this trust fund and will any balance be transferred to the Department of the Interior?

Mr. ANDERSON. No balance was transferred to the Department of the Interior because inspection of fishery products had been underway for a very short period and no balance had been built up for that particular product.

NUMBER OF INSPECTORS

Mr. KIRWAN. You plan to have 25 inspectors. How many has Agriculture had to perform this service?

Mr. ANDERSON. I would say they have about 7 or 8 now.

Mr. KIRWAN. What makes the number jump from 7 or 8 to 25?

Mr. ANDERSON. We have a request for additional inspection in plants not now being inspected.

Mr. KIRWAN. If they had only 7, do you need the difference between 7 and 25—18?

Mr. ANDERSON. Yes.

Mr. KIRWAN. You must figure on tripling the service.

Mr. ANDERSON. We will do that. This is a new development in the fishing industry.

It is barely a year old for fishery products. We have this demand for inspection from at least 15 shrimp plants.

Mr. KIRWAN. Where does the demand come from?

Mr. ANDERSON. From the plants in the gulf area.

Mr. KIRWAN. Who demands it?

Mr. ANDERSON. The industry itself.

Mr. KIRWAN. Industry demands it, and you go down there and inspect them?

Mr. ANDERSON. Yes; the demand is forced on industry by the buyers of their products.

Mr. KIRWAN. So it is the buyers of the products that are demanding the Government inspection; is that correct?

Mr. ANDERSON. That is correct. They have been dealing with agricultural products which are under inspection, and desire the same inspection for fishery products.

Mr. KIRWAN. That is the point that I want you to make. It is "John Public" that is demanding this inspection service.

Mr. ANDERSON. That is right.

SERVICE TO BE FINANCED FROM FEES

Mr. KIRWAN. Will there be enough money coming back to pay for this inspection service?

Mr. ANDERSON. Yes; it is on a fee basis.

Mr. KIRWAN. What will the fee be?

Mr. ANDERSON. The fee is the actual expense, plus 20 percent.

Mr. KIRWAN. When will the first fee be deposited to the trust fund if the program starts on July 1?

Mr. ANDERSON. On these plants we transfer directly we will probably get the first fees within 60 days.

Mr. KIRWAN. Will you please supply for the record the estimated receipts and costs by months for the fiscal year 1959?

Mr. ANDERSON. We will be glad to.

(The information follows:)

Tabulation by months for fiscal year 1959 of estimated costs and receipts for inspection and certification of fishery products

Month	Number inspectors	Estimated cost [1]	Estimated receipts [2]
1958—			
July	19	30,015	
August	19	26,765	
September	21	23,680	10,120
October	22	15,593	10,120
November	24	16,481	12,668
December	25	16,926	11,702
1959—			
January	29	15,850	12,770
February	29	15,850	16,304
March	31	16,570	15,565
April	31	16,570	15,565
May	33	17,460	17,929
June	35	18,265	16,429
Total		230,025	139,172

[1] Estimated cost includes such items as inspector and supervisor salaries, travel and per diem, moving to station, office and product examination equipment, purchase and shipment of samples, contractual services (business machine rental, cold storage, bacteriological assays, etc.), communications, and printing of training and inspection manuals.

[2] Payments are made 15 to 30 days after receipt of invoice.

Mr. KIRWAN. Will this request of $125,000 be repaid by receipts?

Mr. ANDERSON. It will take quite a while to build that back because the 20 percent above the actual expenses must also pay the cost of supervisors and people like that.

Mr. KIRWAN. Are you sure that the trust fund in time will be able to pay the salary of the 25 inspectors?

Mr. ANDERSON. Yes.

Mr. KIRWAN. And it will not be a burden upon the Government?

Mr. ANDERSON. No, sir.

Mr. KIRWAN. What does the Food and Drug Administration do in this field?

INSPECTION BY FOOD AND DRUG ADMINISTRATION

Mr. ANDERSON. The Food and Drug Administration does not do this exact type of inspection. They do have some inspection under what they call the seafood amendment, but actually the industry has departed from requesting those services and they prefer this type now.

Mr. KIRWAN. Will you put a statement in the record covering the whole situation?

Mr. ANDERSON. I will be glad to.

(The information follows:)

The Food and Drug Administration of the Department of Health, Education, and Welfare is responsible for development and promulgation of mandatory standards of identity, quality, and fill of container of food and drug products. In regard to food, the Secretary of that Department shall, whenever in his judgment such action will promote honesty and fair dealing in the interest of consumers, promulgate regulations fixing and establishing for any food a reasonable definition and standard of identity, a reasonable standard of quality, and reasonable standards of fill of container. These standards define minimum requirements and due consideration and allowances are made for different varieties, shrinkage during processing, and for use of optional ingredients. Authority is granted for prevention of adulteration and misbranding of food products.

The Department of the Interior, in all its voluntary standards of grade and condition for fish and fishery products, includes this statement, "Compliance with the provisions of these standards shall not excuse failure to comply with the provisions of the Federal Food, Drug, and Cosmetic Act." Thus the FDA provides the minimum acceptability level for all foods, including fishery products. The voluntary grade standards describe well above that level of quality. In fact products not adjudged within the limits set by a voluntary standard, hence designated as substandard, are still above the acceptable level of FDA mandatory standards of quality. In order for any product to be acceptable for voluntary grading by the Department of the Interior it must be of a quality which exceeds the minimum quality standards of FDA.

The two programs are, therefore, supplemental in nature and intent, and in no way duplicate function or service.

Except for the seafood amendment service described below the FDA offers no voluntary grading service. Their functions relate only to establishment and enforcement of regulations involving minimum acceptable standards for identity, quality and fill of container.

Under the so-called seafood amendment the Food and Drug Administration has authority to carry out continuous inspection of raw fishery products, plant equipment, and processes, and the finished product for compliance with food and drug regulations. At present, this inspection service is not being used by the shrimp processing industry. For a few years there was some use made of this inspection service, but the processors considered it too costly for the marketing advantages that could be expected through use of it. On the other hand, the shrimp industry is strongly behind the voluntary standards program and it has already begun the use of continuous in-plant inspection for breaded shrimp.

The American public has for years purchased agricultural commodities, such as, meat, poultry, frozen and canned vegetables, etc., that carry the United States grade or inspection symbols. The steady gains in per capita consumption of these products indicate that these Federal shields have gained the confidence of the people. Several plants have had inspected and graded fishery products on the market for the past 2 years. They attribute, in substantial amount, increased sales of these products to the consumer confidence and repeat sales arising from use of the inspection and grading service. Several consumer publications, notably Consumer Reports, have featured articles specifically aimed at the quality of fish available on the market. This magazine has also taken favorable notice of the United States inspected fishery products appearing in large and small grocery stores.

The consumer is not the only one who benefits from this service. The processor has unbiased certification as to the quality of his product, and can seek just pay for his efforts. The broker can demand better products and have assurance that his specifications will be met. The banker has a yardstick on which to base his judgment for loans, using stored products of known quality as collateral.

The majority of the fishing industry is behind this movement and we get constant inquiries about the status of standards that are being developed. As additional standards are promulgated, more companies apply for the United States inspection service. In fact, several are only holding back on an all-out program of advertising inspected and graded products until enough standards are available to permit the offering of a complete line of their products in the retail display case.

These indications from the various sources—the consumer buying the product, the broker and banker demanding that the product be inspected, the processor applying for the service, and the trade journals publicizing the United States standards for grades of fishery products and the inspection service to certify the quality of these products—point out that this is one way to raise the per capita and total consumption of fish. This vigorous and well-supported program in this important new field for the domestic fisheries is perhaps the most important advancement that the combined efforts of the industry and the Federal Government have brought about in the last 100 years of our fisheries' existence.

The Department of Agriculture has for some 25 years conducted an inspection and certification service for agricultural commodities of various kinds. Until about 1954 interest in the fishing industry for such a service was sporadic, with but a few companies actively pushing for it. However, with the development of fish sticks, renewed impetus was given to the idea of standards for fishery products. A committee of fish-stick producers requested the Bureau to develop

voluntary standards of grade and condition for fish sticks. A standard acceptable to this group was developed at the Boston Technological Laboratory during fiscal year 1956. The standards were promulgated on July 21, 1956, and took effect August 21, 1956.

An agreement was made effective April 23, 1956, with the Department of Agriculture to promulgate and inspect on the standards developed by the Bureau of Commercial Fisheries. This procedure was necessary because the authority for promulgation and inspection then rested with Agriculture.

At this time there are seven large companies using the fish-sticks standard and subscribing to the inspection service.

The Fish and Wildlife Service Act of 1956 included the fixing of responsibilities for promoting the interest of the domestic fishing industry. Subsequently the Bureau of the Budget determined that certain functions relating to fisheries would be transferred to the Department of the Interior. The authority for promulgation, inspection, or certification services for fish and fishery products was transferred, as of April 8, 1958, in accordance with this decision. An interim working agreement is now in effect whereby Agriculture will continue the promulgation and inspection service for fishery products until July 1, 1958. Thereafter the two Department will actively cooperate to the end that the two standardization and inspection services may be harmoniously and effectively continued to the benefit of all interested persons. The several Agriculture inspectors working fishery plants are now being transferred to the Department of the Interior and additional personnel are being recruited to provide manpower for the performance of this important function now in the Department of the Interior.

The inspection and certification services have historically been operated on essentially a nonprofit basis. The company desiring the services requests that a contract be negotiated for the type and amount of services it desires. The total costs for the services are charged to the company as nearly as they can be determined at the time the contract is consummated. However, in the initial stages of this program, as in other, there are certain amounts and types of costs that might appropriately be called capital investment and for which funds need to be supplied to insure that the functions assigned this Department can be promptly and properly carried out. Once the program has gotten underway the fees for the services rendered make possible the continuance of the program without additional appropriations.

The previous tabulation is based upon the most complete estimate we have of the number of companies who now have the inspection services and of those who have indicated they will request it when the Department assumes the full responsibility for such services on fisheries products effective July 1, 1958. This effective date has been arrived at through the acceptance, by the two Departments, of a memorandum of understanding jointly developed at the request of the Bureau of the Budget.

Mr. KIRWAN. Thank you very much.

Bureau of Mines

Tuesday, June 24, 1958.

WITNESSES

MARLING J. ANKENY, DIRECTOR
PAUL ZINNER, ASSISTANT DIRECTOR, PROGRAMS
C. W. SEIBEL, ASSISTANT DIRECTOR, HELIUM
ELWOOD THOMSON, BUDGET OFFICER

CONSERVATION AND DEVELOPMENT OF MINERAL RESOURCES

Program and financing

	Presently available, 1959	Revised estimate, 1959	Difference, 1959
Program by activities: Operating costs:			
1. Bituminous coal	$5,704,000	$5,810,000	+$106,000
2. Anthracite coal	878,000	886,000	+8,000
3. Petroleum, natural gas, and oil shale	2,399,000	2,463,000	+64,000
4. Ferrous metals	3,073,000	3,895,000	+822,000
5. Nonferrous metals	4,160,000	5,554,000	+1,394,000
6. Nonmetallic minerals	1,810,000	2,266,000	+456,000
7. Foreign mineral activities	315,000	315,000	----------
Total program (obligations)	18,339,000	21,189,000	+2,850,000
Financing: Appropriation	18,339,000	21,189,000	+2,850,000

Object classification

		Presently available, 1959	Revised estimate, 1959	Difference, 1959
	Total number of permanent positions	2,341	2,591	+250
	Full-time equivalent of all other positions	81	81	----------
	Average number of all employees	2,340	2,580	+240
	Number of employees at end of year	2,550	2,800	+250
01	Personal services:			
	Permanent positions	$12,643,000	$14,327,475	+$1,684,475
	Positions other than permanent	361,000	361,000	----------
	Other personal services	169,000	184,525	+15,525
	Total personal services	13,173,000	14,873,000	+1,700,000
02	Travel	520,000	570,000	+50,000
03	Transportation of things	72,000	79,000	+7,000
04	Communication services	150,000	165,000	+15,000
05	Rents and utility services	300,000	325,000	+25,000
06	Printing and reproduction	209,000	224,000	+15,000
07	Other contractual services	741,000	791,000	+50,000
08	Supplies and materials	1,075,000	1,205,000	+130,000
09	Equipment	1,200,000	1,950,000	+750,000
10	Lands and structures	60,000	60,000	----------
11	Grants, subsidies, and contributions:			
	Contribution to retirement fund	820,000	926,000	+106,000
13	Refunds, awards, and indemnities	11,000	11,000	----------
15	Taxes and assessments	12,000	14,000	+2,000
	Subtotal	18,343,000	21,193,000	+2,850,000
	Deduct quarters and subsistence charges	4,000	4,000	----------
	Total obligations	18,339,000	21,189,000	+2,850,000

Mr. KIRWAN. We will now take up the Bureau of Mines.
Mr. Ankeny, do you have a statement?
Mr. ANKENY. Yes; I have a brief statement.
Mr. KIRWAN. Would you like to read it or put it in the record?
Mr. ANKENY. I should like to read it.
Mr. KIRWAN. Go ahead.

GENERAL STATEMENT

Mr. ANKENY. The proposed supplemental estimate for the Bureau of Mines totals $14,180,000. This consists of $2,500,000 to finance an accelerated program on long-range research projects to meet new demands on our mineral resources; $11,280,000 for the construction and equipment of new helium facilities; and $400,000 to cover the cost of increases in salaries of certain engineers and scientists approved by the Civil Service Commission, effective December 29, 1957.

LONG-RANGE MINERAL PROJECTS

The Bureau's request of $2,500,000 is needed to intensify its program of advancing scientific knowledge and ideas to meet new demands on our mineral resources created by missile, rocket, and other related defense developments.

The immediate need for accelerating certain research activities in the Bureau of Mines and the Geological Survey is an important feature of the President's long-range minerals program. At the time the 1959 budget was presented to the Congress, the Department of the Interior was making an intensive study of the long-range minerals program, including the probable impact of expanded research activities. The study now has been completed, and emphasizes the urgency for such research work. That part of the study pertaining to the Bureau of Mines indicates four urgent problem areas where special utilization and supply projects should be employed to insure rapid progress in meeting the Nation's current defense material and technologic needs, and to provide the information, techniques, and know-how upon which new commercial enterprises can be encouraged and based.

An opportunity now exists to translate the products of current research and development work on specialized defense problems into the long-term minerals industry and economic use pattern of the United States.

One solution of the recurring instability in the domestic minerals industry lies in diversification and an awareness of the new industry potential promised by the unusual properties of a host of relatively unused minerals, metals, and alloys. Of some 100 elements presently known, 83 are classified as metals. A third of these are used in important quantities, another third are coming into use, and a third are generally unknown outside of the laboratory.

The extent and scope of the industry of the future will depend upon how rapidly and effectively research and development can provide the knowledge and ideas upon which new enterprises can be based. Experience of the past decades most impressively demonstrates how rapidly the product of research can be projected into new industries.

HELIUM FACILITIES

A new helium plant is urgently needed to provide additional production capacity to meet the present and growing helium needs of the Air Force, Navy, Atomic Energy Commission, National Advisory Committee for Aeronautics, other governmental agencies, and private industrial, medical, and research users.

The United States is presently suffering from a shortage of helium amounting to about 15–20 percent of its needs. Since the Government uses, either directly or on defense contracts, about 90 percent of the total helium consumption, the shortage is seriously affecting Government operations in addition to civilian industries. In May, the Air Force and Navy voluntarily curtailed their orders for helium so that a reasonable volume could be made available to civilian defense industry. An informal cooperative system of allocation is in effect in the Bureau of Mines to assure that the available supply is distributed in the best overall public interest.

At the time the 1959 budget was submitted to the Congress, the Bureau of Mines was working with the Colorado Interstate Gas Co. to obtain the right to extract helium from all of the helium-bearing gas produced by the company from the Keyes field of Cimmarron County, Okla. After a long period of negotiation, a successful agreement was reached with the company on April 4. We also have an option to purchase a plant site in the area. Consequently, we are now in a position to say that the new plant, if approved by the Congress, will be located in the Keyes field.

The Keyes field is the best source of helium that we know about. The proposed plant would extract helium from natural gas before it is transported to fuel markets, and recover about 290 million cubic feet of helium annually. It would operate at capacity to save helium that would otherwise be lost, and any helium produced in excess of demands in the early life of the plant would be conserved for the future.

We are in an extremely precarious and vulnerable position so far as our helium supply is concerned. Except for the recent addition at Exell, our plants are 14 years old or older. A portion of the Amarillo plant was built in 1929; the others were built during World War II. It has been necessary to operate the plants with a minimum amount of preventive maintenance. Any unforeseen breakdown would make the already serious situation intolerable.

The Bureau of Mines cannot assure an adequate supply of helium for the missiles and atomic energy programs without the Keyes plant. Consequently, your approval of our request for funds to enable us to get construction of the plant underway at the earliest possible time is earnestly solicited.

JUSTIFICATION MATERIAL

Mr. KIRWAN. We will insert in the record the item on page 19 of House Document 394 and the justifications.

(The information referred to follows:)

"BUREAU OF MINES

"CONSERVATION AND DEVELOPMENT OF MINERAL RESOURCES

"For an additional amount for 'Conservation and development of mineral resources', $2,850,000.

"HEALTH AND SAFETY

"For an additional amount for 'Health and safety', $50,000."

The above-proposed supplemental appropriations for Geological Survey and for Bureau of Mines, conservation and development of mineral resources, include $3,000,000 and $2,500,000, respectively, for acceleration of research programs to meet the developing demands upon our domestic mineral resources. The remaining sums are needed to cover the cost of increases in salaries for certain engineers and scientists approved by the Civil Service Commission, effective December 29, 1957, and June 1, 1958.

(H. Doc. 394)

Conservation and development of mineral resources

Request (for 12 months from July 1, 1958)	$2,850,000
Appropriation to date	18,339,000
Obligations	None
Expenditures	None
Employment:	
Average number current appropriation	2,340
Number involved this estimate	240
Actual employment	None
Budget estimate next fiscal year	None

PURPOSE AND NEED FOR SUPPLEMENTAL FUNDS

The proposed supplemental appropriation is needed to finance an accelerated program of long-range research projects to meet new demands on our mineral resources created by missile, rocket, and other related defense developments and to cover the cost of increases in salaries of certain engineers and scientists approved by the Civil Service Commission effective December 29, 1957.

Conservation and development of mineral resources

Direct obligation	Appropriated, 1958	Appropriated in 1959 act	Revised, 1959	Increase (+) or decrease (−)	
				Professional pay [1]	Program
1. Bituminous coal	$5,755,000	$5,704,000	$5,810,000	+ $106,000	----------
2. Anthracite coal	887,000	878,000	886,000	+8,000	----------
3. Petroleum, natural gas, and oil shale	2,408,000	2,399,000	2,463,000	+64,000	----------
4. Ferrous metals	3,096,115	3,073,000	3,895,000	+52,000	[2] +$770,000
5. Nonferrous metals	4,208,540	4,160,000	5,554,000	+84,000	[2] +1,310,000
6. Nonmetallic minerals	1,852,000	1,810,000	2,266,000	+36,000	[2] +420,000
7. Foreign mineral activities	282,345	315,000	315,000	----------	----------
Total	[3] 18,489,000	18,339,000	21,189,000	+350,000	+2,500,000

[1] The Civil Service Commission by Circular No. 793 and supplements thereto, established new minimum pay rates under sec. 803 (a) of the Classification Act, as amended, for certain engineers and scientists. The Bureau of Mines estimates that these new minimum pay rates will require an additional $350,000 in fiscal year 1959 under this appropriation in order to carry out our approved programs.

[2] See the following explanation of increases.

[3] Excludes $346,000 transferred pursuant to the authority contained in the 2d Supplemental Appropriation Act, 1958.

The program increase of $770,000 is for the following subactivity:

Subactivity	Appropriated, 1958	Appropriated in 1959 act	Revised, 1959	Increase (+) or decrease (−)	
				Professional pay	Program
Ferroalloy metals	$978,000	$1,016,000	$1,803,000	+$17,000	+$770,000

Need for increase.—The program increase of $770,000 is to expand research on high-temperature metals and alloys needed in high-altitude jet engines and rockets. National security could rest on a difference of only a few percent in plane or missile speeds. The limiting factor on speed traces back to materials of construction, since the hotter an engine can work the more efficient it becomes within the limit of certain physical laws. High-altitude jet engines and rockets will employ new design concepts demanding materials with durability and strength at very high temperature. We are nearing the limit of realization of effective working temperatures using conventional approaches and metals commonly used for such alloys for the past 30 years. The real hope of the future lies with the high-melting-point metals—tungsten, columbium, molybdenum, tantalum, and rhenium—combined with known heat-resistant metals such as chromium, cobalt, and nickel.

Oxidation resistance of these alloys is a greater problem than strength and what is needed is both studies of the fundamental nature of the mechanism of oxidation and means of preventing it, either by protective coverings or alloying. It is known in general terms that impurities have a profound effect on oxidation rate and creep strength, but considerable work is needed to delineate the exact limits or tolerance for foreign elements.

Plan of work.—Funds requested under this program will be used at Bureau laboratories and experiment stations for research to be conducted by Bureau personnel. We expect to coordinate our research to a high degree with other Government agencies and private industry that are concerned with the use and supply of unique metals in defense and related fields.

The Bureau of Mines, with a long record of successful alloy development to meet exacting requirements is well prepared to undertake such a program. Bureau research and development have indicated that these metals in special alloys or ultrahigh purity form offer the ultimate materials for missiles and rocket engines and component parts. Specific work in this area would include:

(*a*) Intensive study of physical metallurgy of tungsten (with secondary emphasis on molybdenum) including preparation and refining of high purity metal; preparation of alloys and thorough study of their physical properties and oxidation resistance.

(*b*) Study of chromium, cobalt, and nickel-base alloys of exceptionally high purity using primarily those metals refined by the Bureau of Mines; effect of controlled amounts and minor amounts of such elements as silicon, carbon, aluminum and nitrogen on such physical properties as creep strength and stability of microstructure.

(*c*) Investigate all modern methods of melting high-temperature alloys such as vacuum induction, consumable arc and electron gun bombardment including casting of shapes.

(*d*) Development of methods for producing high purity iron, vanadium, silicon, hafnium, tungsten, molybdenum, chromium, and columbium by established Bureau of Mines techniques based principally on fused salt electrolysis.

(*e*) To determine by irradiation the effect of neutron bombardment on the physical and mechanical properties of heat-resisting, low-nuclear-absorption-cross-section, or high-strength alloys and set up generalizations in regard to induced properties.

The program increase of $1,310,000 is for the following subactivity:

Subactivity	Appropriated, 1958	Appropriated in 1959 act	Revised, 1959	Increase (+) or decrease (−)	
				Professional pay	Program
Rare and precious metals	$1,081,000	$1,163,000	$2,497,000	+$24,000	+$1,310,000

(*a*) *Special structural materials—program increase, $630,000*

Need for increase.—The program increase of $630,000 is to expand research on the development or improvement of special structural materials to resist alteration by radiation, corrosion, temperature variation, and the like. Irradiation alteration of structural materials presents a serious obstacle in the peaceful application of atomic energy. Zirconium, columbium, molybdenum, aluminum,

magnesium, and stainless steels suffer from the combined effects of temperature, pressure, and neutron bombardment in power reactor systems with resultant changes in thermal conductivity and mechanical stability. Research to determine metals and alloys that are suitable for reactor structural components and a more thorough knowledge of the properties of irradiated materials must be initiated by the Bureau.

We must look at new alloys—such as the magnesium-thorium alloy for the Vanguard satellite—that can be used for skins and components of ballistic missiles and supersonic aircraft. Beryllium, titanium, tantalum, and hafnium as high-purity metals, and alloying ingredients of steels, or in some other combination of elements, may aid the aeronautical engineer in meeting future material problems.

The resources and technology of beryllium must be carefully evaluated. Though the metal and its compounds are quite attractive to the engineer for aircraft structural and high-energy fuel applications, lack of a dependable and adequate supply and uneconomic production techniques have precluded its immediate usefulness.

The automotive, railroad, and commercial aircraft industries anticipate that basic Government materials research will assist in the development of revolutionary lightweight alloys, employing magnesium, aluminum, and titanium, and even more remote elements, to allow highly economic and safe public and private transportation.

The use of new atomic-age procedures—such as activation analysis, gamma catalysis, radio tracers, isotope separation, and element transmutation—will work tremendous improvements in production and utilization of our natural mineral resources.

Plan of work.—Funds requested under this program will be used at Bureau laboratories and experiment stations for research to be conducted by Bureau personnel. We expect to coordinate the work with other Government agencies and private industry that are concerned with the use and supply of unique substances in defense and related fields.

The Bureau, with an excellent background in nuclear metals production technology, as exemplified by its successful conduct of the zirconium-hafnium crash project, is ready to step out with a vigorous program. Proposed research which could be begun at once includes:

(*a*) Hafnium alloying characteristics will be considered, and alloys of hafnium-indium, hafnium-tantalum, halfnium-aluminum, and others will be prepared and tested to ascertain their applicability to special end uses.

(*b*) New and improved magnesium-base alloys of 3 and 4 components require the Bureau's attention. Such alloys will be prepared in the laboratory and tested to determine effects of temperature, pressure, irradiation, and other phenomena upon the chemical and mechanical characteristics of the alloy.

(*c*) A study will be made to develop a simple, quick, and realistic field test for the detection of beryllium in minerals to accelerate public interest in beryllium exploration. Present research on the recovery and utilization of beryl from southeastern pegmatites will be expanded to cover other beryl-bearing pegmatites of the United States where such work may assist in the development of beryllium resources.

(*d*) Electrocladding of less desirable metals and alloys with high-temperature materials such as zirconium, titanium, and molybdenum in fused-salt baths will be studied. Factors of coherence, and adherence, conductivity, fluidity, volatility are among those that will receive special attention.

(*e*) Stainless steels of new and varying composition will be prepared in the laboratory and tested to find their resistance to high temperatures and other mechanical properties of the alloys under demanding conditions.

(*f*) Investigations on the use of ultrasonics in solvent extraction processes and ion exchange reactions will be accelerated, particularly as applied to columbium-tantalum, zirconium-hafnium, and rare-earth extraction.

(*g*) Utilization of nuclear phenomena for research in mineral technology with a nuclear reactor and associated facilities: A research program will be conducted in the fields of neutron activation analysis, irradiation effects upon materials, neutron defraction, gamma catalysis, radioisotopes for tracer applications, and nuclear process heat for metallurgical operations.

(b) Determining new uses for metals, program increase, $680,000

Need for increase.—The program increase of $680,000 is to expand research to find out how to use the unique or unusual properties of relatively abundant commodities to the improvement of our normal economy.

The Bureau of Mines will initiate studies to bring the rare metals from a position of relative inutility and obscurity in the industrial world to one of prominence and productivity. To do so, a program to determine economic means of recovering individual rare metals in quantity must be established and the less obvious properties of these elements must be investigated. Nuclear characteristics of gadolinium, samarium, and yttrium encourage their use by the atomic industry, but lack of production know-how, high costs of very limited supplies of specific metals, and insufficient awareness of alloying technology have seriously hampered applications. Present research programs need the impetus of practical development added to them.

Rare-earth bearing steels and base-metal alloys have potential use in the automotive manufacturing world, but here too, until we can provide sufficient metallurgical comprehension of the elements, little headway can be made toward their significant consumption by major industries.

Artificially produced rare and precious metals, resulting from the fissioning of uranium in research, test, and power reactors, may become abundant enough with the growth of economic atomic power to warrant their recovery from radioactive wastes. Ruthenium, rhodium, palladium, yttrium, and a host of rare earths are present in spent reactor fuels to such an extent that methods for their economic separation should be developed now to prepare for potential military and civilian requirements. The storage of these highly active wastes underground cannot be undertaken until exhaustive research points out that such disposition will not endanger human beings, wildlife, and mineral resources. The Bureau of Mines will contribute to the better understanding of the problems involved.

Depleted uranium, a byproduct of the gaseous-diffusion isotope separation process, is becoming available for nonenergy uses. The industry must better acquaint itself with the isotope's characteristics and determine ways in which this rare-heat element can be put into services by industry.

Ion propulsion as a source of motive power for rockets is a long-range possibility. Cesium and rubidium, which have low ionization potentials, have been frequently mentioned for this use. Resources, recovery, and utilization studies are urgently needed.

Plan of work.—Funds requested under this program will be used at Bureau laboratories and experiment stations for research to be conducted by Bureau personnel. We expect to coordinate our work to a high degree with other Government agencies and private industry that are concerned with the use and supply of unique commodities in defense and related fields. Specific projects to be undertaken are:

(a) Evaluation and classification of domestic beryl deposits with special emphasis on high tonnage, low grade ores; beneficiation and chemical treatment of low-grade ores; production of high purity beryllium.

(b) Development of methods for producing pure rare earth metals by solvent extraction, fused salt electrolysis and bomb or halide reduction techniques; determination of processing and alloying characteristics.

(c) Investigate methods of beneficiating and separating low grade and refractory tantalum and columbium ores; preparation of high purity tantalum and columbium by metallic reduction of the halides; study alloying and oxidation characteristics of the metals.

(d) Development of instrumental analysis techniques using X-ray diffractometer, polarograph spectrophotometer, X-ray fluorescent analysis, and metallograph to develop methods for determination of trace elements in high purity germanium, beryllium, columbium, silicon, tantalum, and hafnium.

(e) Recovery of rubidium and cesium from processed ore waste products and certain mineral waters; study thermodynamic properties of these metals and their salts as well as those of lanthanum, scandium, and yttrium.

(f) Isotope research involving cerium, lanthanum, dysprosium, and europium would use this ultra modern technique to determine equilibria, precipitation and optimum absorption conditions in beneficiation and chemical extraction processes.

The program increase of $420,000 is for the following subactivity:

Subactivity	Appropriated, 1958	Appropriated in 1959 act	Revised, 1959	Increase (+) or decrease (−)	
				Professional pay	Program
Ceramic and fertilizer materials	$937,000	$927,000	$1,365,000	$18,000	$420,000

Need for increase.—The program increase of $420,000 is to investigate materials formed or ultimately used at extreme temperature ranges—and similarly with the substances that must contain such materials during their production or use.

The Nation's success in the areas of nuclear power, jet aircraft, and rockets depends now upon the scientists' and engineers' ability to produce, maintain, and contain extremely powerful fuel reactions. The needs of the atomic energy industry for materials to contain fission and fusion reactions are especially critical.

The exceptionally high operating temperatures of the new "glamour" fuels call for extraordinary durable materials with excellent heat transfer properties and long structural life.

The Bureau of Mines-Atomic Energy Commission process heat reactor studies now underway have demonstrated the need for a comprehensive investigation of refractories and ceramics, as reactor operating temperatures can be raised severalfold above current practice if appropriate materials become available. Economic nuclear power depends largely upon metallurgical advancements.

Plan of work.—Funds requested under this program will be used at Bureau laboratories and experiment stations for research to be conducted by Bureau personnel. We expect to coordinate our research work with other Government agencies and private industry that are concerned with the use and supply of unique minerals in defense and related fields.

The Bureau of Mines, with its facilities and proven ability in process technology, is well prepared to make further contributions to this realm of materials applications. Specific work in this area would include:

(a) Testing and utilization of ceramic raw materials will be intensified in an effort to develop new ceramic raw materials for the production of high temperature refractories and cermets applicable to nuclear reactors and space propulsion systems. More accurate testing methods will be developed for refractory products.

(b) Research on the refractory oxides of aluminum, scandium, yttrium, lanthanum, and cerium with respect to their solid state structure and methods for development for desirable and reproducible structures. Pure, single, component, and mixtures of oxides will be investigated.

(c) The physical and chemical properties of hot-pressed mixtures of zirconium boride and zirconium nitride will be determined. Generally, future investigations will cover the applicability of borides, carbides, silicides, and nitrides of zirconium, titanium, tungsten, and possibly other elements. The growth mechanism and chemical composition-structure-physical property relationships of synthetic materials produced at high pressures and temperatures (5,000° to 10,000° F. and 100,000 pounds per square inch) will be resolved.

OVER $18 MILLION APPROPRIATED FOR 1959

Mr. KIRWAN. The Department said just last January that the budget estimate would permit the Department to meet effectively its responsibilities and the committee allowed the full request for the Bureau of Mines.

With a total of $18,339,000 available for fiscal 1959, including an increase of over $1.6 million compared with 1957, just what steps have been taken to curtail and eliminate work of less importance to take care of these new requirements?

Would you give the committee some examples of the work that has been curtailed or eliminated to meet these essential requirements?

Mr. ANKENY. Sir, I do not believe that there has been any work eliminated or curtailed since the statement was made by the Department. I do believe that in the presentation of our regular budget for 1959, we did list a number of items that were eliminated from our program and substituted other items which we considered of greater importance.

Mr. KIRWAN. With the present economic situation, I am just wondering where the taxes will come from to add another 250 people on the payroll of the Government at a cost of $2,500,000 a year. We are going to have to raise the debt ceiling again.

The Budget said there is going to be a $10 billion deficiency next year and something along the line has to be curtailed somewhere, or we are all going to be out of a job.

Mr. ANKENY. Mr. Chairman, I would like to submit that at least some of these taxes are going to come from new industries created as a result.

Mr. KIRWAN. If we cannot support our present industries, we are going to get very little from new ones.

HIGH TEMPERATURE METALS

The sum of $770,000 is requested to expand research under high temperature metals needed in high altitudes, jet engines, and rockets; $1,116,000 is carried in the 1959 act for this activity.

Please tell us what work is now underway in the Bureau on high temperature metals and alloys and what research is being conducted by other Government agencies and industry in this field?

Mr. ANKENY. Mr. Chairman, I have with me Paul Zinner, who is the Assistant Director for Programs. I would like to call upon him to discuss that question.

Mr. ZINNER. Mr. Chairman, virtually all of our present program is oriented toward the search for new properties and for metals that might enter into a new industry pattern. Our program here is based upon the simple concept that increased and diversified use of mineral commodities can create new industries and that intensified research programs can expedite the process.

Under our current program we are investigating the properties of all of the metals that might form alloys in the high temperature field. What we propose to do under this supplemental program is to try to put these properties to work. Frankly, we do not know what will come out of this research, but we do know that the whole pattern of the industry has changed substantially in the last 50 years. If we look back and think that the industry pattern of the past is the ultimate pattern to maintain, we are lost completely.

I am sure that you will agree with me that the metals that are supporting a major segment of our industry today are those that have come into use in the last 50 years.

AIR FORCE RESEARCH

Mr. KIRWAN. I note where the Air Force has $3 million for research contracts with industry and nonprofit institutions and the National Bureau of Standards in this same area of high-temperature metals and alloys.

First, I wonder why they are doing this work when it would appear to be your job.

Mr. ZINNER. Mr. Chairman, I think part of the trouble here may be in definition. The two words "research" and "development" are frequently coupled for one reason or another and everyone has a difficult time deciding what the proper definition of "research" is. A good deal of the work is probably in the development field. They may be doing some research on components rather than furnishing or producing the raw material.

Mr. KIRWAN. There is no use kidding ourselves. It took only $3 billion to run this Nation in 1929, only 30 years ago, and it is up to $74 billion this year. Something has got to be done to hold down these expenses.

We will put this Air Force statement in the record and ask you to explain how your proposal relates to it.

(Following is the information furnished by the Department of the Air Force at the committee's request:)

The following information is furnished in response to your verbal request concerning research by the Bureau of Mines, Department of the Interior, and the Air Force on high-temperature metals/alloys:

(*a*) Question. The extent, if any, of Air Force research efforts with the Bureau of Mines, Department of the Interior, on high-temperature metals and their alloys needed in high-altitude jet engines and rockets.

Answer. The Air Force is not conducting such a program with the Bureau of Mines.

(*b*) Question. How closely is the Bureau of Mines working with the Air Force on this subject?

Answer. The Bureau of Mines is included on the coordination list for this program and is on distribution for technical reports. In the past the Bureau of Mines has worked directly in the program but no contract exists at the present time. Contract arrangements as well as the work produced have always been satisfactory.

(*c*) Question. What research, if any, is the Air Force conducting in this same area, independent of the Bureau of Mines?

Answer. The Air Force current effort involves approximately $3 million contracted with industry, nonprofit institutions, universities, and the National Bureau of Standards for research in the following areas:

1. *High-temperature alloys.*—The objective of the Air Force program in high temperature-alloy development is to provide metallic materials with related fabrication and heat treatment know-how for application in missiles, aircraft, and powerplants. It includes studies of the metallurgical and engineering properties of refractory alloys, heat and corrosion alloys and general metallurgical research.

Investigations of the metallurgical principles and processes applicable to high-temperature materials are in progress. The studies include the effect of hot working, strain aging, incongruous elements and their interaction effects, vacuum casting, heat treating, and other metallurgical problems applicable to specific alloy development programs.

2. *Ceramic and cermet development.*—The objective of this program is to develop ceramic bodies, ceramic-metal compacts, ceramic coatings and related processes for application in such parts as rocket nozzles and thrust chambers; jet engine nozzles, buckets and combustion chambers; ram jet flame holders and tail pipes.

Studies to identify and exploit the most promising refractory oxides are in progress. Included are investigations of the effects of variables such as particle size, temperature, pressure and time at pressure in producing a hot pressed body. The feasibility of increasing the high temperature strengths of alloys by the addition of refractory oxides employing powder metallurgy techniques is being studied.

(*d*) Question. Is the Air Force "supporting" the Bureau of Mines research in this area?

Answer. At the present time, the Air Force is not supporting the Bureau of Mines in this area. (NOTE: Explanation may be found on p. 232.)

RESEARCH FUNDS AVAILABLE TO ATOMIC ENERGY COMMISSION

Mr. KIRWAN. The Atomic Energy Commission has budgeted $4,644,000 for "Alloy theory and the nature of solids," including an increase of $777,000 for 1959. Included in this is research on high-temperature materials.

Also I note a total of $3,073,000 is available in 1959 to the Bureau of Mines for research in the ferrous metals field. Why cannot a portion of this be diverted to this new requirement?

Mr. ZINNER. I think your first question applies to the AEC. There, again, their concern is with some special use in the reactor field, and all their research is geared to that particular end. Our concern is rather a more objective analysis of all the properties of mineral substances, looking to what they may be used for.

With your permission I would like to call your attention to a press release that we issued last Sunday. I think it will illustrate the role of both agencies in things like this. We have been concerned with pure-metals research to find out more about the physical properties of various metals. As a result of techniques developed by Bureau metallurgists a high-purity chromium wire was produced. We supplied this wire to anybody who thought they might have some use for it. We now find Dr. W. G. Myers at Ohio State University has been having good success with it in cancer therapy. That is an illustration of a profitable byproduct of this research. Never did we think when we started in chromium research that it would have value in the medical field.

I think you will find this of interest.

(The document referred to follows:)

[Press release—Department of the Interior Information Service, Bureau of Mines, June 22, 1958]

HIGH-PURITY CHROMIUM WIRE FOR CANCER RESEARCH PRODUCED BY MINES BUREAU

Tiny "bullets" of radioactive chromium metal, promising weapons in man's fight against cancer, now are available to medical science as a result of Bureau of Mines research in metallurgy, Secretary of the Interior Fred A. Seaton revealed today.

The "bullets" are actually small metal cylinders—a tenth of an inch long and only a thirtieth of an inch in diameter—cut from fine strands of high-purity chromium wire. The wire is produced in this country only at the Northwest Electrodevelopment Laboratory of the Bureau of Mines in Albany, Oreg., with techniques developed by Bureau metallurgists, Seaton explained.

Exposed to neutrons in a nuclear reactor at the Atomic Energy Commission's Oak Ridge, Tenn., installation, some of the atoms in the chromium cylinders are transformed into an isotope called radioactive chromium–51, which emits gamma rays in a manner similar to that of the radium that has been used heretofore in the treatment of cancers. The radioactive chromium cylinders have been used in experiments in animals in which they were either "shot" into cancerous tissues with a device called an implantation "gun" or they were first inserted in a hollow nylon thread and then sewn into a malignant area.

The new use of the radiostope in medical experiments has been developed at the Ohio State University Health Center under the direction of Dr. William G. Myers. He reported recently at the annual meeting of the American Radium Society that results of his work thus far indicate the radioactive chromium gamma-ray sources may prove to be valuable in treating cancer in humans.

Although other radioactive metals, such as the radiocobalt and radiogold previously developed by Dr. Myers, are now being used in cancer therapy, he feels that chromium–51 appears to be the most satisfactory one for some purposes that has yet been developed by him, chiefly because of its half life of 28 days. This is

10 times as long as that of the radiogold, which is inconveniently short for many purposes. On the other hand, it is only one-fourth as great as the 111-day half life of radioactive tantalum that seems to be too long for implantation permanently into cancers in humans.

Another attractive feature of the radioactive cylinders is the fact that they are not altered by body chemicals. Also, chromium 51 gives off no unwanted beta rays that are ineffective against cancer in this method of treatment because of their very short ranges in the tumors. Taken together, these two qualities appear to make radioactive metal safe for permanent implantations.

Extremely pure chromium is needed for these experiments, according to Dr. Myers. If other metals were associated with the chromium, their atoms too might become radioactive on irradiation and alter the effects of the isotope, he explained.

Secretary Seaton termed the availability of chromium wire for this important experimental work "an unexpected dividend" from Bureau of Mines metallurgical studies in high-purity metals. "An impressive thing about this type of fundamental research carried on by the Bureau is that one never knows where or how a new discovery will be applied," he added.

Mines Director Marling J. Ankeny said Bureau metallurgists have been experimenting with methods for making high-purity chromium for several years, and the process by which the wire is made was developed as part of this research. Although only small quantities of wire are produced at present, he said, the Bureau hopes that medical uses and other potential applications might make it profitable for industry to make larger amounts. However, until industry does undertake production, Ankeny said the Bureau will continue to make the wire available to medical researchers.

High-purity chromium wire is made at Albany by a complex metallurgical process in which the wire is drawn through tungsten carbide dies while immersed in a hot-lead bath. The metal is extremely sensitive to small amounts of impurities and to imperfections in its surface. Thus, drawing it into wire is a delicate operation.

Chromium is only one of several metals now produced in ultra-pure form at Bureau laboratories, according to Director Ankeny. He said Bureau metallurgists have made high-purity titanium, nickel, columbium, tantalum, cobalt, manganese, hafnium, and zirconium. Three of these metals, titanium, zirconium, and hafnium, are now being produced by industry with Bureau-developed processes. They have important uses in defense applications.

The Bureau plans to expand its pure metals research, Ankeny said, to find out more about the physical properties of various metals.

"The purer we can make a metal the more we can learn about it," Ankeny explained, "and scientists need this knowledge to create new alloys that can withstand the high temperatures and pressures encountered in nuclear-energy installations and in supersonic aircraft and guided missiles. As in the case of high-purity chromium which now apparently has a future in the medical field, we hope other high-purity elements can be used either directly or in the production of alloys in new areas of scientific advancement."

Mr. KIRWAN. That is very interesting, but I think research in a particular field should be under one head and not scattered over agency after agency if we are to avoid needless duplication.

Off the record.

(Discussion off the record.)

RARE AND PRECIOUS METALS

Mr. KIRWAN. $1,310,000 of the request is for "Rare and precious metals" under nonferrous metals for which $4,160,000 is available in 1959. What is the purpose of this increase?

Mr. ZINNER. Of course, Mr. Chairman, the same difference in objectives between what we are doing now and what we propose to do under the supplement applies in this instance, too. You will recall that the amount of work being done by the Bureau of Mines in the rare and precious metals field has increased considerably over the last

several years. It has increased because of what we have already learned and the opportunities we see in this field.

Here again we are finding, as we separate these metals, that they all have very interesting properties. We propose that some of those properties can be put to work. We simply propose to extend the program on the basis of what we have learned up to this time.

In the rare and precious metals area fall many metals which are not now significant in the industry pattern, but they are relatively abundant in nature and could support, we feel, some new industry.

Mr. KIRWAN. How much is the Bureau spending on this work now?

Mr. ZINNER. On the rare metals program?

Mr. KIRWAN. Yes, rare and precious metals. How much do you have on that?

Mr. ZINNER. $1,081,000 was appropriated in 1958.

ATOMIC ENERGY COMMISSION RESEARCH

Mr. KIRWAN. The Atomic Energy Commission has budgeted $2,162,000 for 1959 in this same field for research on the effects of irradiation on materials. This is an increase of $582,000 over this year. Please comment on the relationship of this AEC work to the Bureau's program.

Mr. ZINNER. There again, sir, they are working in the field of reactor behavior, and again we have difficulty in interpreting between what is research and what is development in this field. We are not advised if their research applies to the development of new reactors or specifically what is involved in that sum of money. We do have some knowledge of what they are doing in the research field because we work closely with them on many subjects and, as you know, we have some funds from the AEC.

Mr. KIRWAN. I note your justification states, "Research to determine metals and alloys that are suitable for reactor structural components and a more thorough knowledge of the properties of irradiated materials must be initiated by the Bureau."

RESEARCH CONDUCTED BY OTHER AGENCIES

Insert in the record what research AEC and other agencies are doing.

Mr. ZINNER. In the rare metals field?

Mr. KIRWAN. In the fields covered by your supplemental.

Mr. ZINNER. Mr. Chairman, to the extent that security will permit, unclassified material, we will do that.

(The information follows:)

AIR FORCE

High-temperature alloys and ceramic and cermet development, $3 million

High-temperature alloys.—The objective of the Air Force program in high-temperature-alloy development is to provide metallic materials with related fabrication and heat-treatment know-how for application in missiles, aircraft, and powerplants. It includes studies of the metallurgical and engineering properties of refractory alloys, heat and corrosion alloys, and general metallurgical research.

Investigations of the metallurigcal principles and processes applicable to high-temperature materials are in progress. The studies include the effects of hot-working, strain-aging, incongruous elements and their interaction effects, vacuum

casting, heat treating, and other metallurgical problems applicable to specific alloy-development programs.

Ceramic and cermet development.—The objective of this program is to develop ceramic bodies, ceramic-metal compacts, ceramic coatings, and related processes for application in such parts as rocket nozzles and thrust chambers; jet-engine nozzles, buckets and combustion chambers, ram-jet flameholders and tailpipes.

Studies to identify and exploit the most promising refractory oxides are in progress. Included are investigations of the effects of variables such as particle size, temperature, pressure, and time at pressure in producing a hot-pressed body. The feasibility of increasing the high-temperature strength of alloys by the addition of refractory oxides employing powder metallurgy techniques is being studied.

BUREAU OF MINES

High-temperature metals

The program increase of $770,000 is to expand research on high-temperature metals and alloys needed in high-altitude jet engines and rockets. National security could rest on a difference of only a few percent in plane or missile speeds. The limiting factor on speed traces back to materials of construction, since the hotter an engine can work the more efficient it becomes within the limit of certain physical laws. High-altitude jet engines and rockets will employ new design concepts demanding materials with durability and strength at very high temperatures. We are nearing the limit of realization of effective working temperatures using conventional approaches and metals commonly used for such alloys for the past 30 years. The real hope of the future lies with the high-melting-point metals—tungsten, columbium, molybdenum, tantalum, and rhenium—combined with known heat-resistant metals such as chromium, cobalt, and nickel. Oxidation resistance of these alloys is a greater problem than strength, and what is needed is both studies of the fundamental nature of the mechanism of oxidation and means of preventing it, either by protective coverings or alloying. It is known, in general terms, that impurities have a profound effect on oxidation rate and creep strength, but considerable work is needed to delineate the exact limits or tolerance for foreign elements.

High-temperature materials

The program increase of $420,000 is to investigate materials formed or ultimately used at extreme temperature ranges—and, similarly, with the substances that must contain such materials during their production or use.

The Nation's success in the areas of nuclear power, jet aircraft, and rockets depends now upon the scientists' and engineers' ability to produce, maintain, and contain extremely powerful fuel reactions. The needs of the atomic-energy industry for materials to contain fission and fusion reactions are especially critical.

The exceptionally high operating temperatures of the new "glamour" fuels call for extraordinarily durable materials with excellent heat-transfer properties and long structural life.

The Bureau of Mines—Atomic Energy Commission process heat reactor studies now underway have demonstrated the need for a comprehensive investigation of refractories and ceramics, as reactor operating temperatures can be raised severalfold above current practice if appropriate materials become available. Economic nuclear power depends largely upon metallurgical advancements.

Explanation of difference

The programs of the Air Force and the programs of the Bureau of Mines complement each other in the fields of high-temperature alloys and ceramic and cermet development. In brief, the Bureau of Mines' role in such programs is to see that definite quantities of metals are available when needed for specific programs. The Air Force program is primarily one of development and end-use of specific metals and alloys, and is largely concerned with the fabrication and testing of various shapes required. Where the Air Force says metallurgy, it is referring only to the metal itself, whereas the emphasis in the Bureau of Mines is on the winning of the metal from its ores and the development of production methods for the highest purity material demanded at the lowest possible cost.

Specifically, then, the work of the Bureau of Mines on tungsten, chromium, cobalt, and nickel-base alloys and on methods for producing high-purity iron, vanadium, silicon, hafnium, and other metals is all directed toward the production of high-purity metals and a general study of their properties to

anticipate their potential use in industry. The interest in alloys is secondary, and is directed toward the most efficient use of metals by maintaining the best properties of one while substituting or alloying a cheaper or more abundant one.

As far as vacuum casting and controlled melting is concerned, the Bureau of Mines, for many years, has been a recognized authority in this field and provides technical information for the use of many other Government and private laboratories, including those of the Air Force.

Again, Bureau studies which would be directed toward the effect of neutron bombardment on the physical properties of certain materials is for the purpose of extending the field of usefulness for certain metals and knowing where substitutions can be made in times of emergency.

In ceramic and cermet development it is clearly stated in the Air Force program that the "objective of this program is to develop * * * for application * * *" This falls in the category of end-use material and different from the general research and development program outlined by the Bureau of Mines, where work aims at discovering new types of refractory ceramics for general application, including some that might be of value to the Air Force in solving some of its specific application problems.

ATOMIC ENERGY COMMISSION

Effects of irradiation on materials, $2,162,000

One of the unique circumstances involved in the use of materials in the atomic-energy program is the fact that they may be exposed to irradiation for prolonged periods. This condition can produce drastic changes in the behavior and properties of materials, and restricts their selection. The research program in this field is devoted to three general areas: (1) an understanding of the theory and basic mechanism of the effect of irradiation on solids; (2) the effect of irradiation on the kinetics of metallurgical processes; and (3) a practical evaluation of the performance of certain materials under irradiation. Although considerable progress has been made in the field of irradiation effects, there still remain many difficult problems from both the fundamental and applied standpoint. Accordingly, the increase of $582,000 planned for fiscal year 1959 provides for increased effort on applied research in radiation effects, solid-state physics radiation studies (basic mechanism, etc.), and the effect of radiation on physical metallurgical reactions.

BUREAU OF MINES

Special structural materials

The program increase of $630,000 is to expand research on the development or improvement of special structural materials to resist alteration by radiation, corrosion, temperature variation, and the like. Irradiation alteration of structural materials presents a serious obstacle in the peaceful application of atomic energy. Zirconium, columbium, molybdenum, aluminum, magnesium, and stainless steels suffer from the combined effects of temperature, pressure, and neutron bombardment in power-reactor systems, with resultant changes in thermal conductivity and mechanical stability. Research to determine metals and alloys that are suitable for reactor structural components and a more thorough knowledge of the properties of irradiated materials must be initiated by the Bureau.

Explanation of difference

The Atomic Energy Commission's program addresses itself solely to the "effects of irradiation on materials" for the purpose of studying factors that "restrict" the use of available materials in the atomic-energy program.

The Bureau of Mines' program aims at the development of structural materials that might be effective in withstanding radiation effects incidental to many other factors, such as unusual performance specifications relating to corrosion, temperature variation, weight, ductility, casting properties, cost, and the like. Such metals, alloys, or materials might be important to the atomic-energy program, and, upon their development, would come within the area of investigation described by the AEC. However, the effect of neutron bombardment is merely one factor influencing the ultimate value and use of metals and materials for a variety of purposes.

The principal components of the Bureau's program relates to the following:

(*a*) With regard to hafnium, the Bureau is concerned with production techniques, and, as a byproduct of this research, is supplying much of the metal

used by the AEC for its research and utilization. Hafnium is important as a neutron absorber in the reactor program. The Bureau and AEC programs are thoroughly integrated and complement each other. There is no overlapping of conflict in the described program.

(*b*) The Bureau proposes to expand its investigations of magnesium-base alloys. In this instance, the purpose is to expand the utilization of an abundant element to offset the need for less abundant elements, or to inspire new uses and industries. While properties such as weight, strength, casting properties, etc., are of principal concern, the effect of neutron bombardment will also be studied, since all the possible end uses of such alloys cannot be contemplated. Nothing in this project conflicts with the AEC program.

(*c*) Beryllium has properties of substantial interest to both the AEC and the Department of Defense; yet this element is not abundant in nature, and it is costly to extract. The Bureau's program is concerned with expanding resources by improving rapid analytical processes, etc., and with improving extractive processes.

(*d*) Ultrasonics and gamma irradiation as a means of accelerating process reactions must be given the Bureau's immediate attention. Little if any effort on these subjects has been made by others, but the opportunities of increasing recovery rates by these phenomena looks extremely encouraging. This research relates very definitely to the conservation and development of resources. The AEC has no responsibilities in this field (other than source materials), and in fact has encouraged the Bureau to try gamma and neutron irradiation as a catalytic agent, in hopes that the peaceful uses of the atomic energy may be developed by the appropriate Government agencies.

(*e*) Nuclear phenomena should be investigated by the Bureau to find its value to the health of the mining and metallurgical industries. The nuclear process heat reactor is a definite possibility in the coal-gasification field and as higher temperatures are realized, may be practical for smelting and refining operations. Neutron activation analysis, neutron diffraction studies, irradiation effects upon the basic properties of raw materials, radio tracer research and other investigations on behalf of the mining industry should be initiated promptly. This would be in keeping with the intent and purpose of the Atomic Energy Act for the development of peaceful uses of nuclear energy. As long as this program involves the conservation and development of the Nation's mineral resources, it will not conflict with, or duplicate, AEC programs. The Commission has always encouraged the establishment of nuclear facilities within the Government agencies, as can be noted at the Naval Research Laboratory, Wright Field, Watertown Arsenal, NACA, and others.

ATOMIC ENERGY COMMISSION

Alloy theory and the nature of solids, $4,644,000

This program includes fundamental studies to increase our understanding of the nature and properties of solids with the purpose of achieving improved materials for the atomic energy program. The research projects include investigations on the nature of cold-worked metal; the processes of recovery and recrystallization, diffusion and sintering in metals and ceramics; the nature of lattice imperfections and solid solutions; the structure of metals and alloys; the thermodynamics of solids; and the mechanism of phase transformation. This category also includes basic studies in solid state physics such as soft X-ray spectroscopy, low temperature specific heat, X-ray and neutron diffraction, nuclear and paramagnetic resonance studies, and others.

The increase of $777,000 planned for fiscal year 1959 provides for a higher level of research in solid state physics, fundamental physical metallurgy, basic surface research, and high-temperature materials research is required.

BUREAU OF MINES

High-temperature metals

The program increase of $770,000 is to expand research on high-temperature metals and alloys needed in high-altitude jet engines and rockets. National security could rest on a difference of only a few percent in plane or missile speeds. The limiting factor on speed traces back to materials of construction, since the hotter an engine can work the more efficient it becomes within the limit of certain physical laws. High-altitude jet engines and rockets will employ new design

concepts demanding materials with durability and strength at very high temperatures. We are nearing the limit of realization of effective working temperatures using conventional approaches and metals commonly used for such alloys for the past 30 years. The real hope of the future lies with the high-melting-point metals—tungsten, columbium, molybdenum, tantalum, and rhenium—combined with known heat-resistant metals such as chromium, cobalt, and nickel.

Oxidation resistance of these alloys is a greater problem than strength and what is needed is both studies of the fundamental nature of the mechanism of oxidation and means of preventing it, either by protective coverings or alloying. It is known in general terms that impurities have a profound effect on oxidation rate and creep strength, but considerable work is needed to delineate the exact limits or tolerance for foreign elements.

Explanation of difference

None of the Bureau of Mines' proposed program on high-temperature alloys is concerned with the fundamental studies such as solid-state physics and nuclear and paramagnetic resonance studies described in the Atomic Energy Commission request. Again we turn to the underlying responsibility and basic obligations of the two organizations. The whole atomic energy program arose from fundamental research work by theoretical physicists in the field of nuclear physics and the basic research program of the AEC of today still has basic responsibility in that area. The Bureau of Mines as a conservation and development agency has the primary purpose of seeing that processes are developed for winning minerals from their ores and the production of metals of required purity for specific uses of other Government agencies as required by defense and changing technology. An illustration of this point is the Bureau's production of zirconium and hafnium. The Bureau of Mines developed a process for producing ductile zirconium at least 3 years before the Atomic Energy Commission became interested in the metal. When large quantities of high-purity zirconium were required, the Bureau of Mines had a successful process developed and knew enough of the general properties of the metal to insure the AEC of the technical feasibility of producing a needed material. After 10 years the Bureau of Mines, in cooperation with the AEC, continues to improve the purity of the product and lower the production cost.

Like the Air Force program, the fundamental research program of the AEC is concerned primarily with a study of the metals and has little or no concern for production methods. The development of methods for producing high-purity metals such as iron, vanadium, silicon, hafnium, chromium, cobalt, nickel, and tungsten outlined by the Bureau of Mines is a program designed to provide the best quality metal for research today and study only general properties which are of interest to all groups in this country, both industrial and Government.

Studies of modern melting techniques, such as vacuum induction, consumable arc, and electron gun bombardment as proposed by the Bureau have in mind the development of melting processes, to melt any metal to the required degree of purity for any application rather than restricting the use to only certain metals for only specific applications.

The Bureau of Mines' work on irradiation effects on the physical and mechanical properties of metals and alloys would be more empirical in its approach than the fundamental one used by the AEC and the knowledge would be of general application rather than being restricted to certain end uses. Consequently, when the Bureau of Mines develops a new production technique or alloy it is able to provide specifications on nuclear bombardment effect as well as all other important properties of the substance produced.

ATOMIC ENERGY COMMISSION

Production, treatment, and properties of materials, $2,689,000

This program is devoted to research and development on metals, alloys, and ceramics that are of special interest to the Atomic Energy Commission. The requirements for materials in the atomic energy program are severe and often unique, and in many cases the efficiency or even the feasibility of a design or system depends upon the properties of the available materials. Since many of the operational factors in atomic energy are unusual, the conventional materials are often unsuitable. Under this category considerable attention is devoted to problems relating to the use of uranium, thorium, and plutonium as fissionable or fertile materials. Typical efforts are the development of improved

processes for extracting and purifying these metals, and investigation of new uranium alloys.

Nonfissionable materials are also included in the program with particular attention to materials for possible use as a fuel element clad, moderator, control rod, etc. This activity includes research and development on new extraction process for vanadium, niobium, and rare earths, and the metallurgical characteristics of these metals and their alloys; the behavior and properties of graphite and ceramics; and the general physical metallurgy of materials of interest in the atomic energy program. Another phase of the effort is concerned with research and development on improved barriers for the gaseous diffusion process.

This category also includes the very important field of corrosion and the development of corrosion-resistant alloys. The trend of reactor design is imposing still more severe corrosion problems on materials.

The increase of $353,000 proposed for fiscal year 1959 provides for an increased effort on fundamental plutonium metallurgy and research on intermetallic uranium compounds and increased effort on applied and fundamental corrosion and ceramics research, and on pure materials since the availability of these pure materials for research is inadequate for the demands of materials research.

BUREAU OF MINES

High-temperature materials program

The program increase of $420,000 is to investigate materials formed or ultimately used at extreme temperature ranges—and similarly with the substances that must contain such materials during their production or use.

The Nation's success in the areas of nuclear power, jet aircraft, and rockets depends now upon the scientists' and engineers' ability to produce, maintain, and contain extremely powerful fuel reactions. The needs of the atomic energy industry for materials to contain fission and fusion reactions are especially critical.

The exceptionally high operating temperatures of the new "glamour" fuels call for extraordinarily durable materials with excellent heat transfer properties and long structural life.

The Bureau of Mines-Atomic Energy Commission process heat reactor studies now underway have demonstrated the need for a comprehensive investigation of refractories and ceramics, as reactor operating temperatures can be raised severalfold above current practice if appropriate materials become available. Economic nuclear power depends largely upon metallurgical advancements.

Explanation of difference

The AEC is looking at columbium, vanadium, molybdenum, and many other metals as well for cladding, moderating, and controlling purposes. The nuclear properties of the material, such as its neutron absorption cross section and neutron scattering cross section, are obviously important and require strenuous investigation by the Commission and its contractors. Electrical resistivity, mechanical stability, and thermal conductivity of columbium, vanadium, and the ceramics in fabricated shapes and under combination of temperature, pressure, and irradiation in nuclear reactors are important research features to the AEC.

But the Bureau must consider the availability, recovery, and production of columbium, vanadium, molybdenum, and ceramics for the Nation as a whole, for whatever uses may develop, regardless of the industry involved. The mining, metallurgical, and manufacturing industries expect the Bureau of Mines to provide them with basic data on raw materials and their characteristics. The refractory oxides of rare earths have a much broader use pattern than the AEC's nuclear program, and these oxides, along with the zirconium, hafnium, titanium, and tungsten borides, carbides, silicides, and nitrides must be investigated as raw materials. Only the experience and qualifications of the Bureau's staff can determine the quality of the basic material and ascertain its role in the conservation and development of the country's natural resources.

The Bureau has not proposed to do any research on graphite, plutonium metallurgy, or intermetallic uranium compounds.

ATOMIC ENERGY COMMISSION

Reactor fuels and materials development, fiscal year 1958, $5,991,000; fiscal year 1959, $5,500,000

Research and development on fuels and materials will continue at approximately the fiscal year 1958 level. Utilization of plutonium and U–233 as fuels will be investigated intensively. Fuels able to operate in reactors for long periods at high temperatures will be sought. Performance of metallic alloys, oxides, and cermet fuels will be evaluated under long irradiation periods and high flux conditions.

Data will be gathered on the physical and mechanical properties of metals, alloys. and materials which may have value when used as fuel cladding or reactor components. Studies will be undertaken on little-known materials, such as rare earth metals, which possess attractive qualities for use in reactor environments. New alloys and materials will be developed and studied.

A comprehensive program to provide scientific information and technology on control rod materials is being initiated. This program will be undertaken by an industrial organization yet to be selected and will provide data suitable for use by reactor designers.

Methods for the nondestructive testing of fuel elements and ractor components will be expanded in order to reduce fuel element cost.

BUREAU OF MINES

Determining new uses for metals

The program increase of $680,000 is to expand research to find out how to use the unique or unusual properties of relatively abundant commodities to the improvement of our normal economy.

The Bureau of Mines will initiate studies to bring the rare metals from a position of relative inutility and obscurity in the industrial world to one of prominence and productivity. To do so, a program to determine economic means of recovering individual rare metals in quantity must be established and the less obvious properties of these elements must be investigated. Nuclear characteristics of gadolinium, samarium, and yttrium encourage their use by the atomic industry, but lack of production know-how, high costs of very limited supplies of specific metals, and insufficient awareness of alloying technology have seriously hampered applications. Present research programs need the impetus of practical development added to them.

Rare-earth bearing steels and base-metal alloys have potential use in the automotive manufacturing world, but here too, until we can provide sufficient metallurgical comprehension of the elements, little headway can be made toward their significant consumption by major industries.

Artificially produced rare and precious metals, resulting from the fissioning of uranium in research, test, and power reactors, may become abundant enough with the growth of economic atomic power to warrant their recovery from radioactive wastes. Ruthenium, rhodium, palladium, yttrium, and a host of rare earths are present in spent reactor fuels to such an extent that methods for their economic separation should be developed now to prepare for potential military and civilian requirements. The storage of these highly active wastes underground cannot be undertaken until exhaustive research points out that such disposition will not endanger human beings, wildlife, and mineral resources. The Bureau of Mines will contribute to the better understanding of the problems involved.

Depleted uranium, a byproduct of the gaseous-diffusion isotope separation process, is becoming available for nonenergy uses. The industry must better acquaint itself with the isotope's characteristics and determine ways in which this rare-heat element can be put into services by industry.

Ion propulsion as a source of motive power for rockets is a long-range possibility. Cesium and rubidium, which have low ionization potentials, have been frequently mentioned for this use. Resources, recovery, and utilization studies are urgently needed.

Explanation of difference

The AEC's program is concerned with the development of metal, alloy, and material products for nuclear reactors or devices. They are interested in the physical and mechanical properties of these metals, alloys, and materials (including the rare earths) as pertain to fabricated items in reactor or weapons systems.

The Bureau of Mines, on the other hand, must find more efficient ways of recovering and separating the closely associated elements, such as those loosely described as the rare earth group, and must determine methods of producing, in sufficient quantity and quality, the metals, alloys, and materials of value to the AEC, its contractors, and the general industry. The fundamental physical, chemical, and mechanical properties of a raw material, be it metal or alloy, are studied by the Bureau as a function of its basic responsibilities. The Bureau, however, is not interested in characteristics of materials in end items nor in the fabrication of these nuclear products. The Bureau has provided and will continue to provide basic materials information to the AEC, and industry, who constantly request it.

The AEC has asked that industry and other Government agencies consider the problem of nuclear process wastes and assist in determining methods for recovering and utilizing the stable and radioactive elements contained in the waste products. As a conservation and development measure, the Bureau cannot overlook either the danger to natural resources, which underground waste disposal implies, or the benefits which recovery of valuable elements from these tailings might offer.

Specifically, the Bureau's program will—

(*a*) Explore beryl deposits which are marginal to submarginal and determine means of economically recovering the beryllium therefrom in as high a purity as possible. This work is recognized by industry as being desperately needed. Results may help the two beryllium companies in the United States to fulfill their obigations to the AEC and industry. Predominant use of beryllium in nuclear reactors will not take place until the supply improves and cost of recovery is reduced—both research functions of the Bureau of Mines.

(*b*) Develop means of recovering rare earths from existing and newly discovered ores. Find the most practical and economic means of separating and producing the rare metals. At the same time, the characteristics of the metals and their alloys will be studied. The Reno, Nev., station of the Bureau was established by Congress expressly for this purpose. This work is the prerogative of the Bureau and is necessary in order to insure that the industries of the United States are fully aware of the availability and potentiality of the rare-earth metals. The nuclear properties of the rare earths are only one of a series of important characteristics of these metals. The work of the AEC on rare earths may supplement that of the Bureau with respect to nuclear properties and applications, but it will not duplicate the Bureau's primary efforts.

(*c*) Radioisotope tracer research on beneficiation and extraction of cerium, lanthanum, dysprosium, and europium, among others, will aid us measurably in ascertaining exactly what happens in separation processes. Radioactivity counting techniques as research tools have not yet been accepted by the mining and metallurgical industries, but they may assist in more efficient production methods. The AEC has been trying for several years to sell radioisotopes in research. They have welcomed the Bureau's entry into this field and have approved our nuclear laboratory facilities.

(*d*) Determination of methods for economically obtaining columbium and tantalum from low-grade deposits and producing high purity metals therefrom will draw upon the Bureau staff's highly skilled techniques, developed in the zirconium and hafnium research for the AEC and the Navy. If we are successful, the AEC will once more have received material support from the Bureau in obtaining nuclear grade metal.

The four programs of the supplemental request are based on proposals submitted by the field research laboratories of the Bureau of Mines. In turn, these reflect the abilities and proficiencies of the respective groups making the proposals, and the need for making such studies. All proposals have been put to the test which is fundamental for all research whether it be in metallurgy, electronics, or agronomy: What is the specific problem? Why must it be done? What can be done about it, and what is the closest approach that any other research group ever made? This means that the scientist or engineer making the proposal is well acquainted with all current or past work of the same nature as far as possible and a careful survey of the past and current literature, attendance at technical meetings and symposiums both to hear the modern up-to-the-minute presentations of technology and to talk personally to people with the same interest who attend these specific technical meetings, visits to Government

and industrial laboratories engaged in the same field of activity. It is of paramount importance to realize that science progresses only through a free exchange of information and intermingling of ideas from many individuals and groups.

The fact that there is a similarity of language in many agency requests is only a reflection of the use of current phrases to describe a particular program to Congress. When reduced to rather broad generalizations, specific programs which will be worked out with different philosophies and approaches tend to take on the same language and sound as though the proposed work is the same. A program on high-purity tungsten, for instance, would be stated in broad terms "to prepare high-purity tungsten and study its alloy characteristics." The Division of Research, Atomic Energy Commission, would approach this problem from the fundamental research viewpoint of refining metal to ultra-high purity and preparing alloys based upon theoretical considerations.

The Bureau of Mines' attack on such a problem would be along the lines of conservation and development and would consist of adaptation or development of processes for producing the highest purity tungsten salts from domestic ores to meet the purity requirements set up by laboratories such as the National Advisory Committee for Aeronautics, which would want the tungsten in a specific form and purity for specific application. To avoid duplication of effort, technical people attend national society meetings, participate in panel discussions, present technical papers, discuss mutual problems with technical representatives of Government and industrial laboratories, and serve on liaison committees for other Government agencies trying to prevent duplication of effort. A number of examples of this type of work performed in the last 12 to 15 months follows:

The Chief Metallurgist; nuclear activities technologist; Chief, Rare and Precious Metals Branch, and the zirconium-hafnimum commodity analyst of the same Branch, Minerals Division, have had at least eight meetings with representatives of the Reactor Development and the Research Division, Atomic Energy Commission, Washington, D. C., and the Pittsburgh operations office of the Navy's Reactor Branch regarding their research work in the four categories for which a supplemental appropriation is requested. Unlike the Bureau of Mines, which does its own research in its own laboratories, the Atomic Energy Commission contracts all its research through universities, industrial firms, and prime contractors who manage the National Laboratories of the AEC.

The attention of the committee is called to a description of one of these programs. Summaries of Physical Research in Metallurgy, Solid State Physics and Ceramics, TID–4005 (pt. I, 4th ed.), edited by Edward Epremian, Division of Research, AEC, Washington, D. C., January 1957, 138 pages. There are no projects with the same titles or the same specific objectives listed in the Bureau of Mines proposal. Since all these AEC projects are fundamental research directed toward an understanding of why certain physical phenomena occur, there are certain problems with a common goal but a different method of approach. For instance, there are contracts here described dealing with the ductility problem of beryllium, and fundamental physical metallurgy studies are required. The Bureau of Mines' interest ends at the metal stage and its interests are in the resource development, beneficiation, and production of pure beryllium salts for metal reduction to take care of any anticipated demand by the AEC or other Government agencies.

It should also be noted that the Bureau of Mines is fully justified in carrying out the proposed program. The following statements appear in the report of the Panel on the Impact of the Peaceful Uses of Atomic Energy to the Joint Committee on Atomic Energy (vol. 1, January 1956):

Page 17: "The peaceful uses of atomic energy affect the function of almost every department and agency of the executive branch and all of the corresponding committees of the Congress. Organization of both branches of our Government must be directed toward acceptance of the fact that the era of atomic centralization in the Government in general and the Commission in particular ended with the decision to press forward with peaceful uses."

"We therefore recommend—

"* * * 2. that other departments and agencies of the executive branch be encouraged to develop their own organizations for dealing with their functional interests in peaceful uses of atomic energy, drawing upon the Commission for advice and services rather than leaning on the Commission or delegating their functions to it;"

References specifically relating the Bureau of Mines to appropriate phases of the atomic energy problem should be noted on pages 87, 135, 149, and 153 of the report.

Representatives of the chief metallurgist's office and the Division of Minerals have visted the Wright Air Development Center, Wright Field, Ohio, twice to attend meetings dealing with the metal beryllium and to discuss the materials program of Wright Field. The interest of WADC is in end use of beryllium and the same for high-temperature alloys so that there is no conflict of interests with the Bureau of Mines development program.

The acting chief metallurgist is a member of a Metallurgical Evaluation Committee for the Office of Ordnance Research, Physical Metallurgy Program, at Durham, N. C. This Committee evaluates ORR work in the field of metallurgy and met at Sagamore, N. Y., Pittsburgh, Pa., and Durham, N C., for this purpose. Future meetings are scheduled for Frankford, Watertown, and Watervliet Arsenals. This particular program, like that of the AEC Division of Research, is 100-percent fundamental research and in general is done by the graduate schools of various universities and no part of any of the proposed programs of the Bureau of Mines in any way duplicates this work.

Direct contact is maintained with metallurgists and materials engineers in the Office of Assistant Secretary of Research and Development of the Department of Defense. This is a mutual exchange of technical information arrangement covering all metallurgical activities of the Bureau of Mines that are lending assistance to DOD programs.

Contact is maintained with the Materials Advisory Board of the National Academy of Science's National Research Council and their summary reports of various materials are studied by the staff of the Office of the Assistant Director—Programs. The acting chief metallurgist of this staff is one of the liaison representatives of Government agencies that assist the committee on refractory metals such as molybdenum, chromium, and tungsten. Other liaison representatives are from the Office of the Assistant Secretary of Defense (R. and E.), Physical Metallurgy Division, Watertown Arsenal Laboratory; Metallurgical Branch, Physical Sciences Division, Office of Naval Research; Materials Division, Wright Air Development Center, Wright-Patterson Air Force Base; National Advisory Committee for Aeronautics, Division of Research of the United States Atomic Energy Commission.

In April 1957 a group of the Bureau's scientists visited the ceramic research laboratories of Union Carbide Nuclear Co., Oak Ridge, Tenn. The Union Carbide Nuclear Co. is engaged in research on nuclear problems under contract with the Atomic Energy Commission. The Bureau of Mines personnel discussed problems of mutual interest with their counterparts in the Union Carbide organization. The Bureau's representatives were told that their proposed research on rare earth oxides would not duplicate work being done by Union Carbide, and that the results of the Bureau's work could be expected to make substantial contributions to the meager store of knowledge regarding the potential utilization of rare earth oxides in high-temperature environments.

As a result of the Oak Ridge conference, discussions with other groups, and literature searches, it is clear that Atomic Energy Commission's materials studies primarily are oriented around nuclear applications. On the other hand, the Bureau of Mines is concerned with all applications of refractory materials including metallurgical processing, jet aircraft, and missiles. Furthermore, the Bureau of Mines approach to refractories problems is the ultimate development of materials and production processes leading to commercially feasible products, whereas most of the refractory-materials research done by others, including Atomic Energy Commission and Department of Defense contractors, is more theoretical. For example, others are concerned primarily with such matters as the thermodynamic properties of the rare earth oxides, phase-equilibrium studies of oxide systems, and the properties of oxide single crystals. The Bureau of Mines utilizes basic data made available by others and applies them to the development of usable refractory materials and methods of producing them.

Two visits have been made to the National Advisory Committee for Aeronautics at Cleveland to discuss the high-temperature materials program and the purity of metals which the Bureau of Mines might supply for experimental work.

Contact is maintained by telephone and visits with metallurgy branches of the Office of Naval Research, Bureau of Aeronautics, and the Bureau of Standards on their programs involving high-temperature materials and pure metals in general.

Direct contact is maintained and personal visits have been made with the three large nonprofit research foundations in this country engaged in metallurgical work—Battelle Memorial Institute, Columbus, Ohio; Armour Research Foundation, Chicago, Ill.; and Stanford Research Institute, Palo Alto, Calif. Reports of work done for Government agencies such as the Wright-Air Development Center program on beryllium are all sent to the Office of the Assistant Director—Programs. Also, all reports emanating from the Special Materials Metallurgical Laboratory of Battelle are studied for their bearing on Bureau of Mines research projects.

The committee should be advised that cooperation with Government agencies is only part of the job. Industry carries out similar research, both on Government contracts and on their own. Visits have been made to such companies as the Electrometallurgical Corp., Du Pont, General Electric, Westinghouse, Ford, General Motors, Temescal Metallurgical Corp., International Nickel, and many others to correlate work on Bureau of Mines materials programs. In the broad field of superduty refractory materials the Bureau of Mines has been in close touch with such organizations as Harbison-Walker Refractories Co., Babcock & Wilcox Co., A. P. Green Fire Brick Co. and its subsidiary Richard C. Remmey Son Co., Gladding, McBean & Co., and many other producers of refractories. Almost without exception technical and administrative representatives of these organizations are enthusiastic about the Bureau's program of refractory-materials research and believe that the Bureau has made and will continue to make important contributions to the development of refractories that will increase the life of existing types of refractories and permit higher operating temperatures. Most of the Bureau's work is of such a nature that private organizations cannot or will not do it.

Frequent conferences are held with appropriate personnel of such organizations as the Norton Co. and the Carborundum Co. to insure that the work of the Bureau of Mines on the borides, carbides, silicides, and nitrides of various metals: (1) Does not duplicate work known to be in progress elsewhere; (2) is within the competence of the Bureau; and (3) shows promise of developing improved refractory, abrasive, and hard materials.

To summarize, the four programs proposed by the Bureau of Mines cover the area of greatest interest to materials engineers and scientists today. Many laboratories are engaged in research activities in the same general areas. Of necessity, the language used in budget requests must have many of the technical terms used by the scientists and engineers removed and therefore general language is similar. However, the actual research involved, the philosophy of approach to achieve the same end result, are vastly different for many of the agencies involved in this type of work. The Bureau of Mines program presented is a sound one and the standard research method of approach has been used in its preparations. This consists of visits to Government laboratories, discussions with technical people and liaison representatives, participation in panel discussions and study of the current technical literature to avoid duplication and wasted effort.

CERAMIC AND FERTILIZER MATERIALS

Mr. KIRWAN. An additional $420,000 is requested under "Nonmetallic minerals" for ceramic and fertilizer materials for which $927,000 was just appropriated for 1959.

What is planned under this increase, and what is now being spent on this field of research?

Mr. ZINNER. Mr. Chairman, this all pertains to the ceramic-refractory field, and it has to do with a continuing problem that is facing metallurgists everywhere in coping with materials at extreme temperatures. Wherever you look I think you will find the problem of containing heat the major obstacle to progress in the energy field, whether it is atomic energy or thermal energy.

Mr. KIRWAN. I note the AEC budget for 1959 also includes increased funds for research on the "behavior and properties of graphite and ceramics." How does this differ from your request? You may include your answer in the statement I requested earlier.

PROFESSIONAL PAY INCREASES

Mr. KIRWAN. $350,000 is requested for increased pay for certain engineers and scientists for fiscal year 1959.

What types of positions and how many employees are involved in this increase?

Mr. ZINNER. I think Mr. Thomson has those figures.

Mr. THOMSON. This increase involves 674 employees and the positions are ceramic engineers, chemical engineers, chemists, electrical engineers, engineers, helium engineer, mathematicians, mechanical engineers, metallurgists, mining engineers, petroleum engineers, physical scientists, physicists, safety engineer, and technical assistants.

(A breakdown of the professional pay cost increase follows:)

Bureau of Mines, conservation and development of mineral resources—Breakdown of professional pay cost increase

Position title	Number	Total amount of increase	Position title	Number	Total amount of increase
Ceramic engineer	8	$4,005	Metallurgist	84	$42,175
Chemical engineer	112	56,955	Mining engineer	112	56,820
Chemist	204	102,445	Petroleum engineer	41	21,645
Electrical engineer	6	4,005	Physical scientist	49	34,365
Engineer	13	5,160	Physicist	31	17,075
Helium engineer	1	215	Safety engineer	1	645
Mathematician	4	1,640	Technical assistant	2	270
Mechanical engineer	6	2,580			
			Total	674	350,000

Mr. KIRWAN. This increase represents 2 percent of the 1959 appropriation of over $18 million. What effort has been made to absorb this small increased cost?

Mr. ZINNER. We are absorbing it now. We simply eliminate some of the work. We are always absorbing something. We probably will absorb the postage increases and everything else and, as you know, the cost of living keeps going up.

Mr. KIRWAN. No; some costs are coming down. We understand from one of the agencies that testified earlier today that they are getting all the bids they want on construction now and the costs are down 15 percent since a year ago.

Mr. ZINNER. I hope you are correct.

Mr. KIRWAN. So you should be able to save a little on the things that are going down to apply on the costs that are going up.

Dr. Fenton.

Mr. FENTON. During the presentation of the 1959 budget of the Department of the Interior it was stated you were making an intensive study of the long-range minerals program including the probable impact of expanded research activities. What are some of the highlights that you have discovered in that study?

SHIFTS IN DEMANDS FOR MINERALS

Mr. ANKENY. One of the things we have determined as a result of this study is that the demand shifts, as Mr. Zinner pointed out a while ago, for various types of minerals. For example, there is a great deal of aluminum being used now where you used to use steel.

Why is it used? Because it is a better metal for a specific purpose. You find titanium, which is a metal that was developed by the United States Bureau of Mines to the point where it could become a useful metal, is replacing the use of bronze and brass in marine construction for underwater use because of its light weight and high resistance to corrosion.

Mr. FENTON. That has been known for a long time. Ever since I have been a member of this committee I have heard that.

Mr. ANKENY. Yes, but mineral uses are changing and will continue to change as new metals are developed in the laboratory and as the properties of those metals are determined.

CERAMIC AND FERTILIZER MATERIALS

Mr. FENTON. I am a little intrigued at this item for ceramic and fertilizer materials. What do you mean by fertilizer materials?

Mr. ANKENY. That is the general heading of that appropriation item. It does not imply that any of the money recommended in this supplement will be spent for fertilizer materials.

Mr. FENTON. I thought there was some cooperation between the Bureau of Mines and industry whereby a lot of fertilizer was produced?

Mr. ANKENY. No.

Mr. BUDGE. Will the gentleman yield?

Mr. FENTON. Yes.

Mr. BUDGE. Is it not a fact you have a plant at Norris, Tenn., where you produce fertilizer?

Mr. ZINNER. Originally we acquired the laboratory at Norris, Tenn., from the TVA.

Mr. BUDGE. You still have it; do you not?

Mr. ZINNER. That is correct. The laboratory at that time was being used to develop ceramic products. We did do some research work with TVA, but the plant at Norris was essentially concerned with trying to generate new ceramics industries in the South to improve the economy in that area.

Mr. BUDGE. Thank you, Doctor.

Mr. FENTON. Off the record.

(Discussion off the record.)

Mr. ZINNER. To clear up this question a little more, we are describing four problem areas in this supplement. They are not commodity areas. They are problem areas.

Mr. FENTON. What I am trying to get at is this: Is there any duplication of effort? Is TVA doing work you should do?

Mr. ZINNER. No, not that I know of. I am sure they are not.

Mr. FENTON. Do you cooperate with the TVA in anything?

Mr. ZINNER. Yes. We know what research they are doing and they know what we are doing and I can assure you there is no duplication in the work the TVA is doing and our work.

Mr. FENTON. Did they ever ask your advice in connection with explosives?

Mr. ANKENY. I have no knowledge of any inquiry from TVA concerning explosives. There may have been some correspondence be-

tween someone in TVA and someone in the Bureau of Mines on explosives, but I do not know of any.

Mr. FENTON. I do not know if I brought this out before in hearings or not.

Mr. ANKENY. I believe you did.

Mr. FENTON. I remember hearing, I do not know how many men were killed, but 1 or 2 men were killed working on explosive problems, and it seems any information they wanted with regard to explosives could have been gotten from the Bureau of Mines.

Mr. ANKENY. That is right. I have no knowledge of that case ever coming before the Bureau of Mines.

One area of cooperation between TVA and the Bureau of Mines has been the analysis of coal used in their processes. That is one service they have had from the Bureau of Mines.

Mr. FENTON. Do they use that very much?

Mr. ANKENY. It has been quite extensive.

Mr. FENTON. Off the record.

(Discussion off the record.)

Mr. FENTON. I think that is all.

Mr. KIRWAN. Mr. Budge.

Mr. BUDGE. Does TVA reimburse you for this work you do on their coal?

Mr. ANKENY. Yes.

Mr. BUDGE. Do you want to put in the record what you got from TVA for that purpose last year?

Mr. ANKENY. We will be glad to do that.

Mr. THOMSON. I believe that project ended several years ago.

Mr. BUDGE. I believe so, too. That is why I was interested in having that information for the record.

Mr. ANKENY. I stand corrected on that.

Mr. BUDGE. Put in the record whatever the true picture is.

(The information follows:)

No funds were made available to the Bureau of Mines by the Tennessee Valley Authority for coal research during fiscal year 1958.

The last advance by TVA to the Bureau for work on coal was made in fiscal year 1955 when TVA advanced $27,000 and made an additional $10,000 available for reimbursement of expenses submitted by the Bureau of Mines. These funds were to continue the field work of investigation of recoverable reserves of coking coal in Tennessee.

Mr. BUDGE. How much do you spend now on fertilizer operations?

Mr. ZINNER. I can describe a couple of the projects we are working on. We can get the exact amount for you.

One of the projects we are concerned with is mining phosphate rock underground.

Mr. BUDGE. If you have a request from industry, do you help them do that?

Mr. ZINNER. We work cooperatively with industry and they bear some of the costs.

Mr. BUDGE. Will you put in the record what industries and how much they contribute?

(The material referred to follows:)

BUREAU OF MINES RESEARCH ON FERTILIZER RAW MATERIALS

The Bureau of Mines is spending no money on fertilizer research. Work in this field is conducted by the Department of Agriculture and the Tennessee Valley Authority.

Mineral raw material research is conducted by the Bureau of Mines. In fiscal year 1959 the Bureau of Mines will spend about $105,000 on phosphate rock mining and beneficiation problems. Plans call for slightly higher expenditures in fiscal year 1960.

The objective of the Bureau's program for phosphate rock is improved recovery through new or modified mining and beneficiation techniques.

In the western phosphate-rock field mining research is under way to develop new underground, mass-mining techniques applicable to huge tonnages of phosphate-rock ore not now completely utilized. For the past several years this work has been done under a cooperative agreement with the Montana Phosphate Products Co., in Montana and now with the San Francisco Chemical Co., in Utah. The cooperating companies have not furnished any money to the Bureau project but have provided underground working places, facilities, and most of the mine labor. These cooperative agreements saved the Bureau of Mines many hundreds of thousands of dollars. Preliminary results have been very encouraging. Studies also are under way to devise new beneficiation methods to improve the phosphate content of material now uneconomic.

In the eastern phosphate-rock producing areas, from one-third to one-half the phosphate content of the ore is discarded because of its extremely fine size. Investigations are determining the exact nature and composition of this slime material and attempting to devise methods of recovery and utilization.

No research is now being conducted by the Bureau on other fertilizer raw materials.

Mr. FENTON. If the gentleman will yield, that is mostly strip mining: is it not?

Mr. ZINNER. That is what it has been. What we are discussing now is phosphate rock in Idaho and Montana. They are getting to the point where they have to go underground at many sites.

Mr. BUDGE. Have you worked with TVA on any fertilizer project?

Mr. ZINNER. No.

Mr. BUDGE. When did you cease?

Mr. ZINNER. It has been a number of years since we did any work with TVA. The last I recall was some research on an electric furnace problem and I think that was 4 or 5 years ago. Prior to that time we had occasional contact with them on specific problems. It never amounted to a very large program as far as we were concerned.

Mr. BUDGE. What is the nature of this operation you referred to?

Mr. ZINNER. Research work on an electric furnace.

Mr. BUDGE. Was TVA connected with that?

Mr. ZINNER. Yes. I think they probably originated the project.

Mr. BUDGE. Is that still going on?

Mr. ZINNER. No, sir.

Mr. BUDGE. Do you still conduct this ceramics project in Norris, Tenn.?

Mr. ZINNER. Yes.

Mr. BUDGE. What is the purpose of that? I believe you said it was to develop industry in a depressed area, something like that. Is that the justification for it?

Mr. ZINNER. This is a successful program. Among other things a number of plants making lightweight aggregates and blocks for building purposes did result from work done there. Also, a number of people manufacturing bathroom fixtures and things of that kind resulted from some of the initial work done at Norris. Most of our work there

now is geared to more exotic types of operations, trying to make insulating materials, components that go into vacuum tubes, and things of that kind.

Also at Norris we made the first synthetic mica as the outgrowth of that research.

Mr. BUDGE. How many people do you employ in that operation?

Mr. ZINNER. As I recall there are probably 20 or 25, something like that, on this type of work.

Mr. BUDGE. I wish you would put a statement in the record as to just what the plant is currently doing and the expense entailed.

Mr. ZINNER. I will be very happy to do that.

(The information follows:)

MINERALS AND METALS PROGRAMS AT NORRIS, FISCAL YEAR 1959

About $380,000 has been allotted to Norris for fiscal year 1959. Research is planned on (1) investigation of the preparation and properties of various carbides, silicides, borides, and nitrides for possible uses as abrasive materials, refractories, and structural materials; (2) studies of synthetic mica, particularly techniques and variables in growing large crystals, properties of many possible compositions, and methods for converting flake synthetic mica to usable sheet material; (3) the feasibility of synthesizing spinel for refractory use from various plentiful raw materials; (4) evaluation of refractory and other clays; (5) studies on synthetic asbestos, including crystallization conditions, development of a production process, and accumulation of data on products of various compositions; and (6) identification of prospector's samples of nonmetallic minerals, as a service to the public.

Proposed research for fiscal year 1960 would continue at about the same level and would extend the above studies along lines indicated by results.

In addition to laboratory research on nonmetals, a mining engineering group engaged in field investigations and mining research in the Southeastern States is stationed at Norris. Their work includes studies of titanium mineral sampling by drilling, investigations of sources of clays and shales for lightweight aggregates, and cursory field examinations and preliminary surveys of promising new and undeveloped mineral occurrences.

BUREAU OF MINES RESEARCH FINANCED BY TENNESSEE VALLEY AUTHORITY

The Bureau of Mines installation at Norris, Tenn., now known as the electrotechnical experiment station, was established in fiscal year 1939, as described in the following excerpt from the Tennessee Valley Authority Annual Report for 1939, page 87.

"The projects originally assigned to the Authority's ceramic laboratory at Norris, Tenn., had by June 30, 1938, been brought to the stage where further larger-scale experiments were not warranted, and negotiations were entered into with the United States Bureau of Mines whereby they would take over the equipment and personnel and operate the laboratory as a Bureau of Mines station for electrometallurgical work on nonmetallic minerals. The necessary arrangements were not completed in time for the Bureau of Mines to obtain the necessary funds, and as the Authority was desirous of continuing two lines of investigation for the completion of its program a cooperative agreement was drawn up. Under this arrangement the Bureau continued two lines of investigation for the Authority; namely, (1) life tests on the graphite resistor developed, and (2) further experimentation in the production of flat ceramic ware by methods devised at the laboratory, and the Authority bore the expense of operation.

"The Bureau of Mines obtained the necessary funds for operating the laboratory during the coming fiscal year and took over the complete operation on June 30, 1939."

Since that time, we do not know of any transfer of funds to the Bureau of Mines by the Tennessee Valley Authority. Occasional assistance on specific problems has been requested by the Tennessee Valley Authority and limited research on such problems has been conducted by the Bureau of Mines with its own funds.

COORDINATION BETWEEN THE BUREAU OF MINES AND THE TENNESSEE VALLEY AUTHORITY

In 1951 the Department of the Interior was invited to participate in the meetings of the joint technical committees of the National Fertilizer Association and the Tennessee Valley Authority; and a member of the Bureau staff was appointed as Interior's liaison member of the technical meetings. The Bureau was represented at three successive annual meetings which were for the purpose of programing and guidance for TVA in its fertilizer research. These meetings are no longer held.

From time to time there has been exchange of visits by the Bureau to TVA and by TVA to the Bureau to obtain latest results of various research projects.

SIMILARITY OF REQUESTS FOR RESEARCH FUNDS

Mr. BUDGE. Mr. Chairman, I am rather interested in this one subject because it so happens I sit on the Public Works Subcommittee and also on the Military Subcommittee, and the Atomic Energy Commission and the Air Force are both doing the same kind of thing that is called for in this supplemental. As a matter of fact, some of the words are identical in the justifications. You say the "behavior and properties of graphite and ceramics." Those are the same words as in the AEC justification and I think in the military.

Here is another about research on high-temperature metals and alloys needed in high-altitude jet engines and rockets.

How do those words get in all three requests?

Mr. ZINNER. I do not know how the same words come about, but it is my feeling that each of these agencies are running into the same problems, and that this research is needed to solve developmental operation problems they have. In the case of the AEC the problem mentioned probably has to do with the behavior of graphite in the atomic pile. We are not involved in that field. We have no specific end purpose in mind but try to keep a completely open mind as to how these materials might be employed.

Mr. BUDGE. How do you know you are not covering the same field that the Air Force is covering and the AEC and other agencies?

Mr. ZINNER. The way we know it is by following reports at scientific meetings, and by having representatives on committees that review research programs on a national basis. This is a rather small fraternity and practically all the people in it know what the others are doing generally.

Mr. BUDGE. I cannot believe that. I do not believe you can tell what is going on in another program.

Here is what you say in your justifications:

Research to determine metals and alloys that are suitable for reactor structural components and a more thorough knowledge of the properties of irradiated materials must be initiated by the Bureau.

Is that not exactly what the AEC would say?

Mr. ZINNER. I think the AEC is probably doing that in connection with some specific reactor design.

Mr. BUDGE. Then why should they not do it all or turn it all over to you? Why should it be done in three agencies?

Mr. ZINNER. I think each agency has clear responsibility along certain lines and a certain amount of research goes with in. You cannot separate them. I agree there may be too many people in Government doing related things, but that does not mean they do not have

a pretty fair idea what the others are doing. As a matter of fact, in the area of tungsten that the chairman referred to, we are now working on making a high-purity tungsten in recognition of other operational problems.

Mr. BUDGE. I am not so sure the Bureau of Mines should not be doing all of it. I am wondering why it appears in three separate justifications, to my knowledge, and apparently the same language is used in all of the justifications.

Mr. ZINNER. I think if you would go to General Electric and General Motors and Westinghouse you would find a lot of people are working in these areas, some with success and some with less success.

Mr. BUDGE. Has AEC requested you to do work in this field in 1959?

Mr. ZINNER. We are doing a great deal of work for AEC in 1959, much of it in this area.

Mr. BUDGE. Why should you not do it all and let AEC reimburse you rather than request it here?

Mr. ZINNER. When we size up a situation we try to see where the research gaps are in the full picture. When we made the analysis upon which this supplemental request is based we found these four areas where any substantial success would have an important impact on the Nation as a whole, and where the possibility of basing new industry seems promising.

Mr. BUDGE. You say:

Research to determine metals and alloys that are suitable for reactor structural components and a more thorough knowledge of the properties of irradiated materials must be initiated by the Bureau.

If that is not a function of AEC I would not know what their function is.

Mr. ZINNER. We do not look on everything that has to do with atomic energy as being completely and wholly a responsibility of the AEC.

Mr. BUDGE. I do not want to drag this out further, but were you requested by the Department of Defense or the AEC to submit this request for appropriations?

Mr. ZINNER. Directly from them officially? No sir, we were not. This is the result of what we think is a fair analysis of the complete picture and the areas in which research might be most effectively pursued.

Mr. BUDGE. But you are not doing it at the request of the AEC or the Department of Defense or some other agency?

Mr. ZINNER. No.

Mr. BUDGE. That is all.

SOURCES OF OTHER THAN APPROPRIATED FUNDS

Mr. Chairman, could I request that the Bureau of Mines insert in the record the amounts they are receiving from all other sources, and specifically the amount which would go for the purposes which are covered in this supplemental request?

Mr. KIRWAN. All right.

(The information follows:)

Amounts received by the Bureau of Mines from Federal and non-Federal sources during the current fiscal year (1958) other than direct appropriations

Advances and reimbursements from other Government agencies:	*Amount*
Atomic Energy Commission	$1,090,833
Central Intelligence Agency	198,696
Department of Defense:	
Air Force	266,387
Army engineers	45,357
Army Ordnance	119,787
Navy Aeronautics	22,000
Navy Ordnance	116,000
Navy Research	61,019
Navy Ships	98,500
Navy Yards and Docks	25,000
Department of Health, Education, and Welfare: Public Health Service	227,025
Department of the Interior:	
Office of the Secretary	20,329
Fish and Wildlife Service	1,007
Geological Survey	8,211
Bureau of Indian Affairs	250
National Park Service	646
Bureau of Reclamation	155,225
Defense Minerals Exploration Administration	578,446
International Cooperation Administration	520,400
General Services Administration	873,908
Coast Guard	85
Bureau of Federal Prisons	215
District of Columbia	325
Post Office Department	1,410
Veterans' Administration	19,525
Total	4,450,586

Funds received from non-Federal sources:	
Allied Chemical & Dye Corp	10,000
American Chrome Co	8,000
American Cynamid Co	5,000
American Gas Association	64,883
American Petroleum Institute	125,640
American Society of Mechanical Engineers	2,400
American Society for Testing Materials	10,300
Colorado Fuel & Iron Corp	5,000
Columbia-Geneva Steel Division (United States Steel Corp.)	5,000
Commercial Solvents Corp	17,500
Commissioner of public lands (Territory of Hawaii)	3,000
Commonwealth of Pennsylvania	85,000
Coordinating Research Council	18,000
El Paso Natural Gas Co	12,494
Esso Research & Engineering Co	20,000
General Electric Co	22,000
General Petroleum Corp	4,750
Hercules Powder Co	7,860
Humphreys Gold Corp	2,000
International Nickel Co	5,000
Kaiser Steel Corp	5,000
Lincoln Concentrates Corp	3,500
McGraw-Hill Publishing Co	850
Merck, Sharp & Dohme	10,000
Monessen (city of)	2,500
Pacific Coast Co	9,000
Petroleum Chemicals, Inc.	2,000
Phillips Petroleum Co	7,500
Pittsburgh Coke & Chemical Co	3,000
Puerto Rico Economic Development Administration	11,000

Amounts received by the Bureau of Mines from Federal and non-Federal sources during the current fiscal year (1958) other than direct appropriations—Continued

Funds received from non-Federal sources—Continued	*Amount*
Rem-Cru Titanium, Inc	$10,000
Saskatchawan Research Council	5,000
Simplot, J. R., Co	2,640
Sinclair Research Laboratory	6,000
Stauffer Chemical Co	10,000
Texas Power & Light Co	3,000
Titanium Metals Corporation of America	5,000
Union Carbide & Carbon Corp	10,000
United States Steel Corp	150,000
Wah Chang Corp	25,000
Total	714,817
Income from helium operations:	
Department of Defense	2,434,665
Atomic Energy Commission	892,618
Weather Bureau	119,950
Other Federal	39,860
Non-Federal sources	1,482,359
Sale of Government-owned gas and distillate	166,898
Resale of gas at Navaho	12,536
Cylinder filling, rental, etc	569,877
Housing rental	80,140
Pipeline rental	13,750
Grazing rights, etc	18,753
Total income	5.831,406
Grand total	10,996,809

Projects funded from outside sources in fiscal year 1958 that relate in some manner to the request for supplemental funds for fiscal year 1959

Source	Title	Amount	Relates to problem area
Federal agencies:			
Navy	Thermodynamic properties of titanium compounds.	$18,980	Determining new uses for metals.
Do	Influence of propellent gases on jet engine performance.	1,785	High temperature metals.
Do	Research on refractory radomes	1,836	Refractory materials.
Do	Behavior of solid explosives and propellents.	4,800	Determining new uses for metals.
Do	Zirconium and hafnium development	70,281	Special structural materials.
Army	Develop technique for producing heavy titanium castings.	1,031	Do.
Do	Evaluation of titanium alloy ingots	17,685	Do.
Do	Jet propulsion research	1,337	Determining new uses for metals.
Atomic Energy Commission.	Fabrication of classified components	140,345	Special structural materials.
Do	Maintain zirconium pilot plant and conduct production research.	540,000	Do.
Do	Thorium melting research	3,000	Determining new uses for metals.
Do	Classified applied research	50,000	Do.
Do	Electrorefining of zirconium from scrap through research by fused salt electrolysis.	70,000	Do.
Do	Metallurgy of uranium raw materials	115,000	Do.
Do	Use of nuclear energy for the production of synthesis gas.	100,000	Special structural materials.
Do	Study of the pyrophoricity of zirconium and hafnium.	45,648	Do.
General Services Administration.	Research on improving methods for producing titaniferous slags from domestic ilmenites.	24,243	Do.
Do	Develop and improve chlorination processes.	60,481	Do.
Do	Development of prototype cell for electrorefining titanium.	390,000	Do.
Do	Research on extraction of molybdenum	2,140	High temperature metals.
Do	Metallurgy of laterites (nickel-cobalt)	173,829	Do.
Do	Synthetic mica as a substitute for strategic muscovite block and film.	20,000	Refractory materials.
Do	Reduction of nickel oxide powder to metal	12,000	High temperature metals.
Non-Federal:			
Puerto Rico: Economic Development Administration.	Investigation of nickel-cobalt potential	11,000	Do.
Commission of Public Lands (Territory of Hawaii).	Investigation of alumina potential	3,000	Special structural materials.
Wah Chang Corp.	Methods research and service on chemical, spectrographic, and X-ray analyses, melting of ingots of zirconium.	25,000	Do.
Stauffer Chemical Co.	Research on process for reducing columbium and tantalum chlorides to metal.	10,000	Determining new uses for metals.
Titanium Metals Corp.	Study of glow discharge in controlled atmosphere arc melting.	5,000	Special structural materials.
American Chrome Co.	Research on benefication of chromite concentrate.	8,000	High temperature metals.
Rem-Cru Titanium, Inc.	Explosion hazard study associated with melting processes.	10,000	Do.
International Nickel Co.	Investigation of the catalytic action of nickel.	5,000	Determining new uses for metals.
United States Steel Corp.	To study blast furnace operation factors and techniques.	121,000	Special structural materials.
General Electric Co.	Explosive characteristics of monopropellents.	10,000	Determining new uses for metals.
Lincoln Concentrates Corp.	Research on separation of lithium and beryllium minerals.	3,500	Special structural materials.
Humphreys Gold Corp.	Recovery of kyanite-sellimanite from sands.	2,000	Refractory materials.
Total		2,077,921	

Health and Safety, Bureau of Mines

Program and financing

	Presently available, 1959	Revised estimate, 1959	Difference, 1959
Program by activities:			
1. Inspections, investigations, and rescue work	$5,585,000	$5,635,000	+$50,000
2. Control of fires in coal deposits	315,000	315,000	
Total program (obligations)	5,900,000	5,950,000	+50,000
Financing: Appropriation	5,900,000	5,950,000	+50,000

Object classification

		Presently available	Revised estimate	Difference
	Total number of permanent positions	744	744	
	Full-time equivalent of all other positions	23	23	
	Average number of all employees	759	759	
	Number of employees at end of year	790	790	
01	Personal services:			
	Permanent positions	$4,285,000	$4,332,000	+$47,000
	Positions other than permanent	116,300	116,300	
	Other personal services	65,700	65,700	
	Total personal services	4,467,000	4,514,000	+47,000
02	Travel	238,000	238,000	
03	Transportation of things	13,000	13,000	
04	Communication services	60,000	60,000	
05	Rents and utility services	58,000	58,000	
06	Printing and reproduction	29.000	29,000	
07	Other contractual services	336,000	336,000	
08	Supplies and materials	213,000	213,000	
09	Equipment	205,000	205,000	
11	Grants, subsidies, and contributions	275,000	278,000	+3,000
13	Refunds, awards, and indemnities	4,500	4,500	
15	Taxes and assessments	1,500	1,500	
	Total obligations	5,900,000	5,950,000	+50,000

Mr. Kirwan. We will now take up health and safety. We will insert the justification in the record.
(The material follows:)

Bureau of Mines

(H. Doc. 394)

Health and safety

Request (for 12 months from July 1, 1958)	$50,000
Appropriation to date	5,900,000
Obligations	None
Expenditures	None
Budget estimate next fiscal year	None
Employment:	
Average number current appropriation	759
Number involved, this estimate	None
Actual employment	None

PURPOSE AND NEED FOR SUPPLEMENTAL FUNDS

The proposed supplemental appropriation is needed to cover the cost of increases in salaries of certain engineers and scientists approved by the Civil Service Commission, effective December 29, 1957.

JUSTIFICATION

Supplemental estimate, 1959, $50,000

The sum of $50,000 is required in 1959 to cover increased pay costs for certain professional personnel.

The Civil Service Commission by Circular No. 793 and supplements thereto, established new minimum pay rates under section 803 (a) of the Classification Act, as amended, for certain engineers and scientists. The Bureau of Mines estimates that these new minimum pay rates will require an additional $50,000 in fiscal year 1959 under this appropriation in order to carry out our approved programs.

PROFESSIONAL PAY INCREASES

Mr. KIRWAN. $50,000 is requested for increased pay for certain engineers and scientists for fiscal year 1959.

What types of positions and how many employees are involved in these increases?

Mr. THOMSON. There are 72 positions involved in this $50,000 request; 51 of them are for mining engineers and the rest are chemical engineers, chemists, electrical engineers, general engineers, mechanical engineers, physicists, and safety engineers.

Mr. KIRWAN. What are the costs of these increases in the current fiscal year?

Mr. THOMSON. Approximately $25,000 in fiscal 1958.

Mr. KIRWAN. This request is less than 1 percent of the 1959 appropriation of $5,900,000. What would suffer if we left out this small amount?

Mr. ANKENY. It would simply mean there would be a few less positions we could fill.

Mr. KIRWAN. Do you not think you could absorb that? We gave the Department of the Interior just about every dollar that was requested and when the bill was finally passed it was $45 million over the budget. What would you do if you did not get this money?

Mr. ANKENY. We would absorb it by reducing the amount of health and safety work we were able to do.

Mr. KIRWAN. You could cut that travel. You have $238,000 for travel. The mines are not doing much and here you have an all-time peak on travel.

You should be able to absorb some of these small requests.

Mr. ANKENY. We can absorb some.

Mr. KIRWAN. You can cut the travel and 2 or 3 other things. If the Nation was booming like it has been in a war period, I would say fine, go ahead and spend $238,000 and get around, but that is not the situation today.

Mr. ANKENY. Even if the plant works 2 days a week, or 5 days a week——

Mr. KIRWAN. I am not asking you to curtail on the mine inspections. Some of the mines have not been working for months. There are many mines down that you are not going to inspect until they are ready to resume work again. There is no necessity for going there when the mines are not working.

Mr. ANKENY. There are not too many mines shut down that will resume operations. Most of this depression in the coal industry is the result of curtailed working time.

Mr. KIRWAN. Steel plants are the plants that use the coal, and they are down to 50 percent again. In my town they are down to 49 percent. That is the third largest steel center in the country. When they are down the coal mines are down.

Mr. ANKENY. The mines instead of working 5 days a week on 2 or 3 shifts for 24 hours are now working 2 days a week at 1 shift a day.

Mr. KIRWAN. The steel corporations are not going to be working some mines 2 days a week, and some other mines 2 days a week. They are going to work the mines most beneficial or they cannot survive. In a period of war they will all produce. I see where the United States Steel Co. intends to sell some bonds to help carry it over. They cannot put those bonds on the market and work some of the coal mines 2 days here and 2 days there. They will have to work the most efficient mines.

Mr. ANKENY. You will find that there are not many mines of the steel corporation shut down. They have curtailed operations. It is a costly thing to shut a mine down with the idea of resuming it.

Mr. KIRWAN. Look at what it costs to shut down a blast furnace. That is why they have consolidated. When I was a boy we had 10 coal breakers and there is only 1 now. They do all the crushing of the coal. If they had not been taken out of the picture, you would have an inspector at every coal breaker. But they are out of the picture and they are doing it at one coal breaker.

Mr. FENTON. All of this increase is due, according to the justifications, to the new minimum pay rate; is that right?

Mr. ANKENY. That is due to the raise of the professional engineers authorized by the Civil Service Commission.

Mr. FENTON. Of course, all the other items from the original presentation are the same. I am in line with what the chairman is saying. What other contractual services do you have? What is this $336,000 encompassing?

Mr. THOMSON. That is mostly for control of fire work in coal deposits.

Mr. FENTON. What is this object class, "Grants, subsidies, and contributions"?

Mr. THOMSON. That is the Government's share of the contributions to the retirement fund.

Mr. FENTON. What is involved in the $336,000?

Mr. THOMSON. The health and safety appropriation involves two activities, inspections, investigations, and rescue work, and the control of fires in coal deposits. The object class that you are looking at covers the object breakdown for both activities.

Mr. FENTON. I see. Control of fires in coal deposits, no change.

Mr. THOMSON. No change.

Mr. FENTON. But there is a change in investigations, inspections, and rescue work, $50,000. That is due to the new rate increase?

Mr. THOMSON. That is correct.

Mr. FENTON. But it does not mean an increase in employees?

Mr. THOMSON. It does not.

Mr. ZINNER. On the item of control of fires in coal deposits, no people benefited from the civil service action so none show up there. It is all against the first line, investigation and rescue work.

CONSTRUCTION OF HELIUM PLANT, BUREAU OF MINES

Program and financing

	Presently available, 1959	Revised estimate, 1959	Difference, 1959
Program by activities:			
1. New laboratory facilities	$1,719,000	$14,119,000	+$12,400,000
Financing:			
Unobligated balance brought forward	−723,000	−1,120,000	−397,000
Unobligated balance carried forward	723,000		−723,000
Appropriation (new obligational authority)	1,719,000	12,999,000	+11,280,000

Object classification

		Presently available, 1959	Revised estimate, 1959	Difference, 1959
	Total number of permanent positions		100	+100
	Average number of all employees		59	+59
	Number of employees at end of year		100	+100
01	Personal services:			
	Permanent positions		$277,364	+$277,364
	Other personal services		7,416	+7,416
	Total personal services		284,780	+284,780
02	Travel		30.000	+30,000
03	Transportation of things		59,220	+59,220
04	Communication services		14,000	+14,000
05	Rents and utility services		2,000	+2,000
06	Printing and reproduction		8.000	+8,000
08	Supplies and materials		525,000	+525,000
09	Equipment		450,000	+450,000
10	Lands and structures	$1,719,000	12,728,000	+11,009,000
11	Grants, subsidies, and contributions: Contribution to retirement fund		18,000	+18,000
	Total obligations	1,719,000	14,119,000	+12,400,000

Mr. KIRWAN. Next is the construction of a helium plant. We will insert the item on page 19 of House Document 394 and the justification.

(The item and justifications follow:)

"CONSTRUCTION

"For an additional amount for 'Construction,' $11,280,000, to remain available until expended."

This proposed supplemental appropriation is needed to finance an expansion of helium facilities to meet the growing demand. At the time the 1959 budget was presented to the Congress, the Department of the Interior was working out arrangements with gas producers to permit the Bureau of Mines to process the gas. Arrangements have now been completed and this proposed supplemental, together with $1,120,000 of unobligated funds, would provide for construction of the necessary facilities.

BUREAU OF MINES

(H. Doc. 394)

Construction

Appropriation to date	$1,719,000
Obligations	None
Expenditures	None
Budget estimate next fiscal year	None
Request (for 12 months from July 1, 1958)	11,280,000
Employment:	
Average number, current appropriation	None
Number involved this estimate	59
Actual employment	None

PURPOSE AND NEED FOR SUPPLEMENTAL FUNDS

This proposed supplemental appropriation in the amount of $11,280,000 is needed to finance an expansion of helium facilities to meet the growing demand. The amount requested, together with $1,120,000 of unobligated funds, would provide for construction of the necessary facilities.

JUSTIFICATION

Helium production facilities:	
Appropriation estimate, 1959	$11,280,000
Prior year funds available	1,120,000
Total	12,400,000

Funds in the amount of $12,400,000 are needed by the Bureau of Mines for the construction of a new helium production plant, and for an administrative, engineering, and service building. These funds consist of $1,120,000 in unobligated balances available from prior years, and an appropriation of $11,280,000 for 1959.

Helium production plant, $12,025,000

The sum of $12,025,000 is needed for the construction of a new helium production plant with a capacity of approximately 290 million cubic feet a year. The plant would be completed near the end of fiscal year 1959.

The Bureau of Mines is the only known producer of helium in the world. An indication of the importance of helium may be gained from advice from the Assistant Secretary of Defense for Supply and Logistics that more than $900 million of the Defense Department's 1956 appropriations were dependent upon an adequate supply of helium. The General Manager of the Atomic Energy Commission has stated that it could not meet the production levels set by the President if its helium requirements should be restricted in any way. Helium is also an important industrial gas used in the manufacture of many defense items.

Federal agencies—principally the Navy, Air Force, AEC, and Weather Bureau—utilize directly about 70 percent of the helium produced by the Bureau of Mines; and more than half of the helium used by private industry is for work on Federal contracts. Figure 1 shows how the helium produced in 1957 was distributed among various users.

Estimates supplied by the Department of Defense, AEC, and ODM indicate that the demand for helium will continue upward in peacetime, and moreover, that it would jump to almost double the peacetime demand in the event of all-out mobilization. Two curves representing long-range estimates of helium demands for peacetime and mobilization are shown in figure 2. These curves were taken from a comprehensive report on helium completed in December 1955. Recent estimates supplied by helium users for the current fiscal year 1958 add up to 400 million cubic feet (represented by a star in figure 2), which is considerably above the peacetime curve. The Bureau of Mines has asked the various users to review their long-range estimates in the light of this situation, but replies are incomplete as of this writing. Preliminary information from the Air Force indicates that a sharp increase in helium usage in the guided missile program is anticipated for fiscal year 1960.

The increase in the demand from fiscal year 1957 to fiscal year 1958 is just about equal to the additional capacity afforded by expansion of the Exell, Tex., plant. Consequently, the helium supply and demand relationship will continue

to be extremely tight throughout 1958 and 1959. Any unexpected reduction in the output from the present plants, because of variations in helium-bearing gas supplies or for any other reason, will precipitate a very serious helium shortage.

Under the most favorable circumstances, the present plants are capable of meeting the most essential peacetime defense requirements through 1959. The plants could not produce enough helium to meet the estimated mobilization requirements under any circumstances and the limited supply of helium would prove to be a deterrent factor in any effort to accelerate the missile program. the proposed new plant would remedy this deficiency. Furthermore, it would also achieve a conservation benefit if the output from the plant is not fully required to meet current demands. The plant would recover helium that would otherwise be lost to the atmosphere when the natural gas containing it is consumed in fuel markets. This would enable the Bureau of Mines to reduce the withdrawal of helium from Government-owned reserves in peacetime, and also conserve, by storage in the Government-owned Cliffside field, helium that is recovered from fuel gas in excess of peacetime demands.

The need for helium conservation has become increasingly apparent as the demand has increased. No important sources of helium-bearing gas have been found in the past 14 years, and the present resources are being steadily depleted to supply fuel markets. If the helium demands continue to increase as expected and nothing is done to conserve the helium presently wasted in fuel gas, the helium-bearing gas resources cannot supply the country's helium needs past 1975–80. This situation is shown graphically in figure 2. The top dotted line in this illustration represents the known sources of helium-bearing natural gas capable of supplying helium production plants.

A new national helium conservation policy, designed to save 32 billion cubic feet of helium that would otherwise be wasted in fuel gases, was announced by the Department of the Interior on May 1, 1958. The conservation objective is illustrated in figure 3. The need for new legislative authorities and other factors in implementing the policy are presently under study.

The situation is well defined: (1) the national defense and economy would be seriously hampered if war should occur before additional helium production and transportation facilities are constructed; and (2) a substantial part of our helium resources are being wasted in the face of almost certain large future needs. The proposed new plant would remedy the first situation, and also be a step in the direction of conservation. It is the least that the Government can do at this time without jeopardizing the future of our country.

Administrative, engineering, and service building, $375,000

The continuing growth of the helium program makes it imperative that additional space be provided to take care of administrative, engineering, and service personnel. At the present time, the clerical, administrative, and engineering work of the helium activity is performed at Amarillo by 97 employees scattered in 6 buildings on the Amarillo plant grounds and in 1 building in downtown Amarillo. The proposed new building will consolidate these employees in modern working quarters and provide room for expansion to keep pace with increased helium production and sales. A suitable site for the proposed building is available on the Amarillo plant grounds.

HELIUM USES

Mr. KIRWAN. Now, I am going to ask you some short questions and you can make some short answers to them.

Please summarize the principal uses for helium.

Mr. ANKENY. Mr. Chairman, I have with me the Assistant Director for Helium, Dr. Seibel, and I would like for him to answer the questions.

Mr. SEIBEL. Let us start with the first use for balloons and dirigibles. From there we went to deep-sea diving. Then we went to the treatment of asthma and medicinal uses in connection with anaesthetics. From there it started to branch off very rapidly. It got an impetus in the welding of hard-to-weld metals. Then in many other metallurgical processes. Today it is used in the production of little

transistors, and with liquid helium they have a gadget called a cyclotron that looks like two little hairs twisted together which can be used at liquid helium temperatures and do the work of a radio tube. Helium is used in the production of radio tubes. It is used in the production of airplane components and in the production of welded steel tubing.

Mr. KIRWAN. You can add to that and supply it for the record at this point.

(The information follows:)

Many new uses have been developed for helium since World War II when most of the production went to lighter-than-air craft. The industry continues to require large volumes of the gas and other early uses, such as in deep-sea diving and various medicinal applications, continue to hold their own.

Within the last few years, however, atomic-energy activities and the guided missile programs have together dominated the demand for helium. The reseachers of the National Adivsory Committee for Aeronautics are requiring ever-increasing quantities of the gas.

The use of helium in shielded-arc welding has developed rapidly since World War II and now large volumes of helium are used in welding hard-to-weld metals and other metallurgical processes.

Helium is used extensively to detect leaks in vessels and piping which must operate under pressure or at high vacuum. Using helium, leaks can be detected which are so small they would not pass 1 quart of air in 2,000 years. Relatively large volumes are used for this purpose by the various defense industries.

The Bureau has been assured that there is no satisfactory substitute for helium used in many phases of the defense industries, such as in the production of airplane engines and engine parts, in the manufacture of stainless steel, and the fabrication of stainless steel tubing, articles made of aluminum, copper, and nickel. The production and fabrication of the relatively new metals, titanium and zirconium, require large volumes of helium. The production of radio tubes, transistors, certain analytical equipment and many research projects demand helium in ever-increasing quantities. Low temperature research in the region from absolute zero to 20° above, Fahrenheit, can only be performed with the aid of helium. These researches using liquid helium promise many astonishing things for the future. Helium has given both industry and research a new tool of great value to our national economy.

Many large and small businesses depend on an adequate supply of helium to keep their operations from closing and numerous reports have reached the Bureau that failure to receive even a few cylinders of helium a week would cause a plant shutdown with loss of time to many of the employees.

HELIUM PRODUCTION REQUIREMENTS

Mr. KIRWAN. What is the present annual production capacity of the existing plants?

Mr. SEIBEL. We are going to produce 340 million cubic feet of helium this year, which ends the 1st of July. That means that we are running under forced draft 24 hours a day, 365 days a year. That is all we can do at the present time.

Mr. KIRWAN. Before you discovered helium in Oklahoma, what did it cost a foot?

Mr. SEIBEL. I have sold it personally at the rate of $2,500 a cubic foot. At one time I owned practically all of it.

Mr. KIRWAN. What does it cost a foot now?

Mr. SEIBEL. We are producing it for about $12.18 a thousand cubic feet, or $13.16 per thousand including interest charges as of June 1, 1958.

Mr. KIRWAN. How does present production compare with the current annual demand?

Mr. SEIBEL. We are from 15 to 20 percent below the demand. With all stops out we are unable to meet the demands of the defense industry and defense contractors by from 15 to 20 percent, and that, sir, represents about a year's production in 1950.

Mr. KIRWAN. What will be the capacity of the new plant?

Mr. SEIBEL. It will be from 200 million to 290 million cubic feet a year.

Mr. KIRWAN. Please supply for the record a statement from the Department of Defense that this new plant is required.

(The information follows:)

The Assistant Secretary of Defense, Mr. Perkins McGuire, in writing under date of June 10, 1958, to Mr. Gordon Gray, Director of Defense Mobilization, with a copy to Under Secretary of the Interior Hatfield Chilson, presented classified data on defense requirements for helium but said in part:

"In view of the considerable time required to construct new helium extraction facilities, it is apparent that the present capacity-expansion program of the Department of the Interior should be carried out as expeditiously as possible."

LOCATION AND DIMENSIONS OF PROPOSED PLANT

Mr. KIRWAN. Where will the plant be located?

Mr. SEIBEL. Within about 10 miles of Keyes, Okla., Cimarron County.

Mr. KIRWAN. Please describe briefly the dimensions and the nature of the plant.

Mr. SEIBEL. The plant will occupy an area of about 100 acres. That is necessary in order to have sewage disposal and water rights in the area. It will consist of a number of industrial-type buildings, and as you know, we have always built our plants with so-called temporary-type buildings, ones that we could move—structural steel with wrinkled tin outside.

SELF-SUSTAINING BASIS

Mr. KIRWAN. Will this plant be financed on a self-sustaining basis through helium sales?

Mr. SEIBEL. As you know, we never have received, since the bureau has had control of the helium operations, any money for the operation or maintenance of the helium plants, and we do not propose this one shall require appropriated funds for operation and maintenance.

Mr. KIRWAN. Will any revenue be turned back into the Treasury?

Mr. SEIBEL. That is a fair proposition, or possibility. Last year we returned to the Treasury $500,000. This year we propose to return another $500,000.

SUPPLY OF NATURAL GAS

Mr. KIRWAN. Is there adequate gas now available for processing to assure full use of the new plant?

Mr. SEIBEL. Yes, we have a contract for a guaranteed quantity of natural gas, and the contract also has in it a stipulation on the maximum withdrawals from the helium-bearing gas in the field, so we have a sort of conservation measure in addition to a guaranteed supply of gas.

Mr. KIRWAN. How many tank cars will be required for the shipping of it?

ADDITIONAL EQUIPMENT AND PERSONNEL

Mr. SEIBEL. We will require approximately 35 tank cars in addition to the ones that we already have.

Mr. KIRWAN. Explain the need for the 159 additional employees, including 100 permanents.

Mr. SEIBEL. We have four plants at the present time. We have a total of about 417 employees. That averages about 100 employees to a plant. Eighty percent of these people will be operational people who will be operating under a wage board setup.

Mr. FENTON. I think that you have covered this pretty well. I think that we need such a plant. Are you doing any research in any other area of helium?

Mr. SEIBEL. Sir, we have a very small staff for which we obtained some funds under the Bureau setup for research. We try to keep in touch with all the developments in natural gas in the hope that we will be able to find some new helium-bearing gas. We also do some research work on the thermo-dynamic properties of helium-bearing natural gas in order to reduce the cost of producing helium.

Mr. FENTON. Does the removal of helium from gas have any effect on the gas itself?

Mr. SEIBEL. It makes the gas a little better; that is, from a burning standpoint. The companies normally profit by our increasing the heating value of their gas. It is not a great amount, but it is some.

Mr. FENTON. In the case of this new field in Oklahoma, do you again put the helium back into the ground?

Mr. SEIBEL. If we should produce more helium, which seems unlikely to me, than we have a demand for, we would put any excess back into storage in the Government-owned field close to Amarillo.

SELF-SUSTAINING BASIS

Mr. BUDGE. What do you mean by "self-sustaining" so that it will not cost the Government any money?

Mr. SEIBEL. Let me put it this way. We are charging for the helium an amount to cover depreciation, and in the case of any helium that is sold to commercial people it covers the interest charges.

Mr. BUDGE. Depreciation of what, your physical plant?

Mr. SEIBEL. Yes. Actually, we use part of the money that is recovered there to maintain the plant. As you will recall, in passing the act under which we do business which was passed September 1, 1937, it was brought out in the hearing that it was the intent of Congress to have these plants as self-sustaining as possible, and we are attempting to do that to the best of our ability.

Mr. BUDGE. Assuming this money is appropriated, would you then include the amount of this appropriation in your capital structure and make your charges for helium correspondingly?

Mr. SEIBEL. In all probability we would have to increase the cost of helium slightly in order to take care of depreciation of this plant. The depreciation item would go into the cost of the helium, or the sales price of the helium.

Mr. BUDGE. You just opened up a new facility last year in Texas, did you not?

Mr. SEIBEL. A year ago last June.

Mr. BUDGE. Are you collecting enough money to pay the Government back for the appropriation?

Mr. SEIBEL. Eventually it will be collected.

Mr. BUDGE. I wish that you would put a statement in the record as to just how you will finance the one that came in in 1957 and the one that comes under this program.

Mr. SEIBEL. I am not certain as to your wishes there. We would expect to have an appropriation, of course, from Congress for the initial cost of the plant. That is in the submission. We would recover the cost of that by charging a depreciation item over the expected life of the plant. We have a contract for the life of the gas field which is estimated to be at least 20 years, so we would depreciate this over 20 years, charging a depreciation each year for the production that is sold. Is that what you wish?

Mr. BUDGE. That is what I want, to show just how you intend to recover to the Government the amount appropriated, assuming it is appropriated.

Mr. SEIBEL. It would be merely a statement that we would assume the life of the field to be 20 years. We would recover the full cost of the plant by charging the depreciation over the 20-year period. Does that take care of your question, sir?

Mr. BUDGE. What I want to know is whether the money appropriated by Congress for the construction of the new facilities is included in the amount that you charge for the gas so that the Government is eventually reimbursed.

Mr. SEIBEL. Yes: that is correct.

Mr. BUDGE. I want to know now how that works out. Just put a little statement in the record.

Mr. SEIBEL. We will try to put a statement in there that will satisfy you.

(The information follows:)

DEPRECIATION, PERIOD JULY 1, 1957, TO JUNE 1, 1958

To cover the depreciation and depletion of the four Government plants and properties, charges to costs were made as follows:

Depreciation and depletion	$1,080,439.33
Depletion	17,454.11
Interest, non-Federal only	74,901.96
Total	1,172,795.40

$500,000 was returned to Treasury September 1957.

Depreciation charges are made on the basis of recovering the investment in 20 years or the life of the gas field, whichever is shorter.

AVAILABLE CARRYOVER FUNDS

Mr. BUDGE. What happened to the $723,000 that you had in reserve in this fund?

Mr. THOMSON. At the time that the 1959 budget was presented we had estimated we would have $723,000 reserve of funds previously appropriated. The $723,000, plus the $397,000 more that we have accumulated since that time, goes to make up $1,120,000 of the total cost which is $12,400,000. We are asking for an appropriation of $11,280,000 against $12,400,000, the cost, and the difference is from carryover funds which include the $723,000.

Mr. Budge. You also have substantial funds coming in during the next 12 months, if you have had $300,000 in the last 3 months.

Mr. Thomson. No. This is from appropriated funds for construction, and we have about exhausted the fund that was appropriated under the construction fund.

Mr. Budge. Put in a little statement about what has happened to that $723,000 carryover and the other income you have, and how you apply it.

(The information follows:)

The unobligated balance of $723,000 shown in the 1959 budget under the appropriation "Construction" represents the Bureau's estimate of previously appropriated funds that will not be required for completion of construction projects. The supplemental estimate for the construction of the Keyes helium plant proposes to apply this balance against the cost of the new plant. In addition, it is now apparent that the estimated cost of the addition to the Exell helium plant will no be as great as previously expected, thereby releasing an additional $397,000. This $397,000 plus the $723,000 gives a total of $1,120,000 to apply against the $12,400,000 total estimated cost of the Keyes plant, thus reducing the additional amount needed to $11,280,000 as requested in this supplemental estimate.

CONSTRUCTION OF ADMINISTRATION BUILDING

Mr. Budge. Is all of this construction to be done in Oklahoma?

Mr. Seibel. Yes; substantially all of it will be. The Bureau may do some special facility construction work in Amarillo, but the major part of it is going to be done in Oklahoma.

Mr. Budge. On something as urgent as you would make this appear, why do we have to spend $375,000 for an administrative building in Texas?

Mr. Seibel. Perhaps I can answer it in this way: We have about 92 people at the present time, mostly engineers and administrative people, housed in 6 different buildings within the grounds at Amarillo. A survey was made of the entire situation there by the General Services Administration and they invited bids for space which they justified. Their bids, which were not responsive, brought out, however, the fact that in a 5-year period to house these people properly, get them out of the scattered 6 buildings, some of which have no toilet facilities, the rent would be $272,000.

Mr. Budge. What is the emergency about it, though? Why do you come in with a supplemental request to build such a thing as an administration building?

Mr. Seibel. It is a part of the overall situation. We are doing a great deal of this work with our own engineering force. These people are very badly—and have been for a long time—handicaped by reason of their lack of facilities. They are spread all over the landscape, two blocks apart, and so forth.

Mr. Budge. That is sure a long way, two blocks apart. How far do you think it is from this hearing room to my office? I make that trip about 7 or 8 times a day. I can see no emergency for building a new administration building. How far is it from Amarillo, Tex., to the field in Oklahoma?

Mr. Seibel. 120 miles.

Mr. Budge. You will be 120 miles away from the new plant?

Mr. Seibel. Practically all of our engineering work is done down in Amarillo.

Mr. BUDGE. Has the Department of Defense asked you for the construction of this new facility?

Mr. SEIBEL. We have a letter from the Department of Defense. It has been received under a clasified banner that does ask us to do everything we can to expedite this.

Mr. BUDGE. I will ask the staff to check with the Department of Defense on it. Why should not the Department of Defense pay some of the cost? Or all the costs of construction?

Mr. SEIBEL. Why should they not pay what?

Mr. BUDGE. Why should not that be in the Department of Defense's appropriation bill if it is primarily being constructed for the Department of Defense?

Mr. SEIBEL. The only thing I can say is the Congress passed the so-called Helium Act back in 1937, which charged the Department of the Interior with the production of helium to meet the needs of the Army, the Navy, and other agencies of the Federal Government.

INCOME FROM HELIUM OPERATIONS

Mr. BUDGE. They also said that it would be self-sustaining, but I wish that you would furnish for the record a statement of all of the income that comes into the helium program of the Department of the Interior, and the source from which it comes.

Mr. SEIBEL. I will do that.

(The information follows:)

Income from helium operations, July 1, 1957, through May 31, 1958

Department of Defense	$2,434,665.06
Atomic Energy Commission	892,618.06
Weather Bureau	119,949.68
Other Federal	39,859.48
Total Federal	3,487,092.37
Non-Federal	1,482,359.15
Total	4,969,451.52
Sale Government-owned gas, and distillate	166,898.05
Resale of gas at Navaho	12,536.34
Cylinder filling and rental, etc	569,876.55
Housing rental	80,139.68
Pipeline rental	13,750.00
Grazing rights, etc	18,753.39
Total	5,831,405.53

Mr. KIRWAN. We thank you for your appearance here today.

Office of Saline Water

WITNESSES

DAVID S. JENKINS, DIRECTOR
J. J. STROBEL, CHIEF, BRANCH OF ENGINEERING DEVELOPMENT
DALE L. ROTHROCK, CHIEF, FISCAL SECTION, DEPARTMENT OF THE INTERIOR

Salaries and Expenses, Office of Saline Water

Program and financing

	Presently available	Revised estimate	Difference
Program by activities:			
1. Administration and coordination	$165,000	$215,000	$50,000
2. Research and development:			
Contracts and grants non-Federal	600,000	1,040,000	440,000
Federal laboratories	60,000	100,000	40,000
Total obligations	825,000	1,355,000	530,000
Financing: Appropriation (new obligational authority)	825,000	1,355,000	530,000

Obligations by objects

Object classification	Presently available	Revised estimate	Difference
Total number of permanent positions	20	22	2
Average number of all employees	19	21	2
Number of employees at end of year	20	22	2
01 Personal services:			
Permanent positions	$132,500	$157,500	$25,000
Positions other than permanent	3,000	5,000	2,000
Other personal services	1,500	1,500	
Total personal services	137,000	164,000	27,000
02 Travel	11,000	22,000	11,000
04 Communication services	2,000	4,000	2,000
06 Printing and reproduction	2,000	6,500	4,500
07 Other contractual services	576,000	1,016,000	440,000
Services performed by other agencies	60,000	100,000	40,000
08 Supplies and materials	1,500	3,500	2,000
09 Equipment	1,500	3,500	2,000
11 Grants, subsidies, and contributions	34,000	35,500	1,500
Total obligations	825,000	1,355,000	530,000

Average salary and grade

	1958 actual	1959 estimate	1959 estimate revised
General schedule grades:			
Average salary	$6,998	$7,093	$7,563
Average grade	9.4	9.6	10.1

Mr. Kirwan. We will now take up the Office of Saline Water. You may supply your statement for the record and summarize your request if you desire.

(The statement referred to follows:)

STATEMENT BY DAVID S. JENKINS, DIRECTOR, OFFICE OF SALINE WATER

This request for an additional $530,000 for the fiscal year 1959 is made on the basis of a change in conditions since submission of the original budget estimate for $825,000. Several developments subsequent to submission of the previous estimate place increased urgency on the need for additional fresh water supplies and increased rate of activity on the development of saline water conversion. The Secretary's Advisory Committee on Saline Water Conversion met on March 25, 1958, to review the program and recommended acceleration through stepped-up appropriations. Increased congressional interest in saline water conversion is shown by the introduction of six bills during January and February 1958 which would provide for an expanded program.

The additional funds bring the total request for fiscal year 1959 to $1,355,000. That is the average amount which can be made available within the authorization for the next 5 intensive years of the program. The details of the determination of that average were shown on page 4 of the previous justification for the fiscal year 1959. The justifications for the regular appropriation for $825,000 state that some of the pilot-plant activities and other parts of the research and development work would have to be curtailed under that appropriation. The present request would remove that curtailment and provide the administrative funds needed to bring about an increased rate of activity.

The estimated research and development program under the regular fiscal year 1959 appropriation and revisions which would be made on the basis of the additional funds requested are shown in the following table:

Activity	Fiscal year 1959 program of $825,000 [1]	Fiscal year 1959 supplemental program of $530,000	Fiscal year 1959 total program of $1,355,000
1. Development of rotary stills	$80,000	0	$80,000
2. Other distillation	100,000	$145,000	245,000
3. Solar distillation	95,000	0	95,000
4. Membrane processes	115,000	70,000	185,000
5. Freezing processes	95,000	80,000	175,000
6. Other processes, including nuclear energy combinations	110,000	70,000	180,000
7. Exploratory research, surveys, and evaluations	65,000	40,000	105,000
8. Test facility	----------	75,000	75,000
Total research and development	660,000	480,000	1,140,000
9. Administration and coordination	165,000	50,000	215,000
Total	825,000	530,000	1,355,000

[1] As given in the House hearings, Jan. 13, 1958 (p. 41).

The planned expenditures of the supplemental funds as listed under the items in the table are briefly as follows:

2. Other distillation: Experimental results obtained so far make it advisable to accelerate the development of the process of the type proposed by W. L. Badger utilizing long-tube vertical evaporators. Provisions are made in the estimate for preparing engineering designs, drawings, and specifications for a medium-size pilot plant. In addition, the estimate includes funds for increased research on other distillation systems such as flash and forced circulation.

4. Membrane processes: Additional work is planned in the field of membrane processes which are largely for use on brackish waters. The additional work includes a prototype on the osmotic process and further development of electrodialysis, particularly at the Engineering Laboratory, Bureau of Reclamation, Denver.

5. Freezing processes: Funds to be provided for a small pilot plant will accelerate development of the freeze-vaporation system.

6. Other processes: A small pilot plant utilizing the solvent extraction process, which has been developed in the laboratory, is now planned as the appropriate process development step to be taken at this time.

7. Exploratory research: The need for more basic and exploratory research was emphasized in recent congressional hearings. Funds for this purpose would be increased $40,000 over the previous budget estimate.

8. Test facility: There is an urgent need to have Government experimental facilities at a seashore site where prototype process equipment and small pilot plants can be emplaced and operated under field conditions. However, in the absence of appropriations for that purpose, use is being made of a site near Port Orange, Fla., belonging to the Coast Guard. Funds are needed for minor improvements and minimum operations.

9. Administration and coordination: Acceleration of the program is dependent entirely upon the ability of the staff to increase the activity. Both in the office and in the field greater activity by Department personnel is needed. This need is for additional scientific and engineering personnel working directly in the Office of Saline Water with necessary expenses, and for increased travel needed to coordinate the widely dispersed activities.

All research and development programs are subject to revisions or modifications as results of the work become available and as contracts are negotiated on the best basis possible. Therefore, it is to be expected that the amounts suggested for the various process researches represent the best estimates possible at this time, and that as the work develops some adjustments should be made in the detailed breakdown of individual research to assure best overall results.

Mr. JENKINS. The request for this additional $530,000 is made on the basis, Mr. Chairman, of a changed condition since the original budget request was submitted.

There have been several developments which have indicated the increased urgency in developing processes and in advancing and accelerating the saline water conversion program.

The principal indication of increased urgency come about from the fact that the Congress itself has recognized the urgency and has called it to the attention of the Department, and there has been a number of bills—6 or 7—introduced in Congress, all of which would lead toward a greatly stepped-up program.

In addition, a review of the program was made by the Department. The Secretary's Advisory Committee on Saline Water Conversion met and assisted in that review, and at that time urged as its first recommendation a stepped-up appropriation.

Now, the uses to which we would plan to put this money, if it is appropriated, are given in the table in my statement in the second column.

There are a number of sums which I will discuss very briefly.

WORK TO BE EXPANDED

On other distillation, the experimental results that have been obtained so far on the Badger long-tube vertical distillation equipment are sufficiently promising that we feel now we can proceed more rapidly than originally anticipated.

Then with the membrane processes, additional work is planned which would include considerable actual development of improved lower cost equipment and processes, particularly in the engineering laboratory in the Bureau of Reclamation in Denver.

The freezing process that we have under development was one of those which was planned for some curtailment under the original budget request. It has advanced sufficiently so the pilot plant can now be designed and developed during this coming year.

With a number of other processes, including the very promising one known as solvent extraction being developed, at Texas A. and M., the work has advanced sufficiently that it seems certain now we are ready to build a small pilot plant.

There has been a greater and greater need for more basic and exploratory research, and this was emphasized in the recent congressional hearings. At present only about 5 or 6 percent of our funds have been used for basic research.

Ever since last fall when the need for additional basic research in science and engineering in the United States was brought to light by other developments, there has been a growing realization that additional basic research is needed, both in this field and elsewhere.

We hope it will be possible to increase the exploratory and basic research for developing new ideas up to perhaps 10 percent of the total appropriation, and this was urged in recent congressional hearings.

There is and has been an urgent need for a test facility of some kind. In the absence of a substantial appropriation for that purpose, we are getting along with the borrowed facilities in North Carolina temporarily, but they will not be available to us much longer. The International Nickel Co. is being crowded there in its own work.

Meanwhile, we have solar distillation experiments underway at a site belonging to the Coast Guard near Port Orange, Fla., and that site needs some minor improvements. For that purpose we plan to use some $75,000 of these funds.

These are estimates, I am sure that you understand that. These are our best estimates at this time. In all research and development work we have to take advantage of every opportunity of advancing, moving more rapidly one month than we did another month. Therefore, in order that we can make the best use of funds we may negotiate some contracts a little better than we now anticipate, and there may be some improved distribution beyond that which is indicated in this table.

Mr. KIRWAN. Does that complete your summary?

Mr. JENKINS. Yes, sir.

JUSTIFICATION MATERIAL

Mr. KIRWAN. We will insert the item shown on page 18 of House Document 394 and the justification in the record.

(The item and the justification follow:)

"DEPARTMENT OF THE INTERIOR

"DEPARTMENTAL OFFICES

"OFFICE OF SALINE WATER

"Salaries and Expenses

"For additional amount for 'Salaries and expenses', $530,000.

"Since submission of the original budget estimates in January of this year it has become evident that additional funds will be needed by the Office of Saline Water in order to continue its research program at a reasonable pace. The results of the research accomplished to date show that an expanded program of pilot plant construction is needed in order to realize fully the benefits of the basic research.

"This proposed supplemental appropriation includes funds for engineering designs of a 1 million gallons per day plant and for construction of two smaller pilot plants. In addition, funds are included for improvement of a seashore test facility as well as for additional research on processes not yet ready for pilot plant construction."

Salaries and expenses, Office of Saline Water

Request (for 12 months from July 1, 1958, to June 30, 1959)	$530,000
Appropriation to date	825,000
Obligations	None
Expenditures	None
Employment:	
Average number, current appropriation	19
Number involved this estimate	2
Actual employment May 31, 1958	13

PURPOSE AND NEED FOR SUPPLEMENTAL FUNDS

To accelerate the saline water program to meet the need for additional fresh water supplies. The supplemental estimate includes funds for engineering designs, drawings, and specifications for a medium-size pilot plant and construction of two smaller pilot plants, other types of research and a small increase in administration and coordination.

JUSTIFICATION

Several recent developments since submission of the budget estimate of $825,000 for the fiscal year 1959 indicate that conditions have changed which place increased urgency on the need for additional fresh water supplies. The Secretary's Advisory Committee on Saline Water Conversion met on March 25, 1958, to review the program and recommend acceleration through stepped-up appropriations. Increased congressional interest in saline water conversion is shown by the introduction of six bills during January and February 1958 which would provide for an expanded program.

This request for an additional $530,000 for the fiscal year 1959 will bring the total request to $1,355,000. That is the average amount which can be made available within the authorization for the next five intensive years of the program. The details of the determination of that average were shown on page 4 of the previous justification for the fiscal year 1959. The justifications for the regular appropriation for $825,000 stated that some of the pilot-plant activities and other parts of the research and development work would have to be curtailed under that appropriation. The present request would remove that curtailment, and provide the administrative funds needed to bring about a stepped-up rate of activity.

The estimates of the major expenditures planned under the fiscal year 1959 supplemental request are briefly as follows:

1. Distillation: (*a*) Engineering designs, drawings and specifications for a medium-size pilot plant for a process of the type proposed by W. L. Badger, utilizing long-tube vertical evaporators. Results so far on the experiments now being carried out on elements of the process make it advisable to accelerate this development. (*b*) Additional research on some phases of flash systems in addition to preliminary engineering designs for a small pilot plant utilizing low temperature differences. Estimated amount needed, $145,000.

2. Membrane process: Additional work in the field of membrane processes including a prototype on the osmotic process and further development of electrodialysis, particularly at the Engineering Laboratories, Bureau of Reclamation in Denver. Estimated amount needed, $70,000.

3. Freezing and solvent extraction: Small pilot plants for freeze-evaporation and solvent extraction processes in addition to the preliminary engineering phase. Estimated amount needed, $150,000.

4. The funds available for use in exploratory and basic research to be increased $40,000 over the previous estimate.

5. There is an urgent need to have governmental facilities at a seashore site where prototype process equipment and small pilot plants can be emplaced and operated under field conditions. However, in the absence of appropriations for that purpose, use is being made of a site near Port Orange, Fla., belonging to the Coast Guard; $75,000 is needed for minor improvements and minimum operations there.

6. Administration and coordination: Acceleration of the program is dependent entirely upon the ability of the staff to increase the activity. Both in the office and in the field, greater activity by Department personnel is needed. This need is for additional scientific and engineering personnel working directly in the

Office of Saline Water with necessary expenses. It is proposed to add two senior scientists who will devote their full time and attention to scientific and technical problems. The salaries of these two positions together with a small amount for increased salary costs of other positions and for w. a. e. employment will require $27,000. Funds for travel, communications, printing of reports, and other administrative expenses have been very limited and $23,000 additional is requested for these items. The total increase required for administration and coordination is $50,000.

ORIGINAL 1959 BUDGET SUFFICIENT

Mr. KIRWAN. We have recently allowed the full 1959 budget request of $825,000, an increase of $100,000 over this year. When the Department was before us only 5 months ago, Mr. Jensen asked if the saline-water program was advancing at as rapid a speed as possible and proper, and whether there was sufficient money in the budget request to carry it on. The answer given was, "Yes; I think we have sufficient funds."

Why is it that we now suddenly get a request for an additional $530,000, or an increase of 64 percent over the original budget, which was considered "sufficient" 5 months ago?

The basis for the request seems to be that an average amount of $1,355,000 is desired for the next 5 years under the 14-year authorization. Why is this a valid basis for setting the level of research?

Mr. JENKINS. Mr. Chairman, most research programs can move at any desired rate. It depends considerably upon two things; namely, the amount of money available, including the personnel available to advance the program, and the types of ideas, improvements, and developments which come to our attention on which we can work to advantage.

The review of this program has been made during the past 3 or 4 months. This was also mentioned in the January hearings, and the staff of the Department, together with the advisers who represent research and scientific organizations the country over, have agreed that the program should advance now more rapidly and that it can do so to good advantage with the progress that we are making. That progress is real, Mr. Kirwan.

ADVISORY COMMITTEE RECOMMENDATIONS

Mr. KIRWAN. The Department issued a press release on April 15 to the effect it was requesting an increase in the appropriations based on the recommendations submitted by the Advisory Committee.

How long did this Committee meet?

Mr. JENKINS. The Committee had an assembled meeting of 1 full day but it had much information which had been sent to it over a period of about 3 months.

Mr. KIRWAN. Will you please supply for the committee copies of the agenda and of the material supplied the Advisory Committee by the Department?

Mr. JENKINS Yes, sir.

REPORT OF ADVISORY COMMITTEE

Mr. KIRWAN. Please submit the Committee's report for the record.

Mr. JENKINS Yes, sir.

I have that report here.

Mr. KIRWAN. Submit it for the record if you have it.

Mr. JENSEN. How long is that report?

Mr. JENKINS. It is a very short report.

(The report referred to follows:)

The advisers to the Secretary of the Interior on saline water conversion met on March 25, 1958, in Washington, D. C. After a full day of discussion of progress and problems in saline-water conversion, the advisers reported their findings in the form of the following recommendations.

1. Program should be accelerated through stepped-up appropriations making full use of the existing authorization.

2. Existing authorization should be spent for research and initial pilot-plant development.

3. Large pilot plants should come from additional authorization and earmarked appropriations which are recommended.

4. The duration of the saline-water program should be extended beyond the existing authorization.

5. We should encourage cooperating in a foreign demonstration plant in exchange for technological information to the Office of Saline Water regardless of what Government agency would be involved.

6. We should foster foreign contacts and have at least one research project outside the United States which would serve to encourage others.

7. Availability of a seaside test facility would be extremely desirable.

8. Basic and exploratory research must be continued.

9. There is an urgency in California which requires definitive conclusions within 6 to 8 years relative to the California water plan.

10. An increased effort should be made to inform the public of the program, progress, and responsibilities.

11. Office of Saline Water should be commended for the excellent progress to date with the limited funds available.

Members of the Committee who attended the meeting were: Prof. Everett Howe, representing Dr. Robert G. Sproul, president, University of California; Sheppard Powell, consulting engineer, Baltimore, Md.; Prof. Jack McKee, reprseting Dr. Lee A. DuBridge, president, California Institute of Technology; Dr. Louis Koenig, Koenig-Research, San Antonio, Tex.; Dr. Ralph A. Morgan, representing Dr. Frederick L. Hovde, president, Purdue University; and George Humphrey, president, University of Wyoming.

Mr. KIRWAN. They only met 1 day?

Mr. JENSEN. I would like to read that report before we mark up the bill.

Mr. KIRWAN. Yes; without fail.

We have a copy here for the committee but submit one for the record. We will have to read it before we mark up the bill.

I do not mean the press release, but the Committee's report. That is what we are interested in.

Mr. JENKINS. May I explain that the Committee submitted only one report and that was a set of recommendations. Those recommendations are all included in this press release and constitute the entire report of the Committee.

Mr. KIRWAN. It is not the press release we are referring to. What we are requesting is the Committee's report showing its findings and the basis for its recommendations, including the increased funds that you are requesting now.

That is what we want, the report of the Committee.

Every year you come here and tell us about a report of the Committee and that they have discovered this and that and we would like to see what they have written concerning their review. What is their basis for the amount of funds requested each year?

All we get is the recommendations of the Committee but we never see the report.

Mr. JENKINS. Mr. Chairman, I should make it clear that the only report in writing which the Committee prepared was the set of resolutions which it adopted.

Mr. KIRWAN. Then do not say "a report" because a list of recommendations is not a report.

You said the Committee made a report?

Mr. JENKINS. Yes, sir.

Mr. KIRWAN. Now you say it is a set of resolutions?

Mr. JENKINS. That is the report itself.

Mr. KIRWAN. I thought the Committee issued something when they made a review of your program. Now you are talking about a set of resolutions.

We inserted in the regular 1959 hearings the report made in Thomas Jefferson's day concerning the taking of salt out of the water. That was over 150 years ago and I do believe we have made much progress since then.

How did the advisory committee review the progress achieved to date under the program?

ADVISORY COMMITTEE NOT ORGANIZED

Mr. JENKINS. This group of advisers consists of eight individuals. It is referred to as a committee, but it is, in fact, a group of individuals. It has not been organized with a chairman. It is only a group.

Mr. KIRWAN. Let me check you there. They have not been organized, and you expect this committee, sitting on this side of the table, to give you a lot of additional money based on its recommendations?

We just gave you an increase of $100,000 in the regular 1959 bill, and then in a couple of months you expect us to give you another $530,000 on the basis of the recommendations of a committee that is not even organized and did not issue a report?

Mr. JENKINS. Not entirely on that basis.

Mr. KIRWAN. That is what you just said. You said that they are not even organized, and they do not even have a chairman.

You could take any group of men, some fellows on the railroad tamping ties, and they could just sit around the table and say, "Yes; we are in favor of it."

Right here in this press release it says, "Based on the recommendations of the advisory committee."

This report is sent out to the press, and it is based on their recommendations. Then you tell us they have never been organized and never had a chairman.

Mr. JENKINS. This is a group of people who come together when called. They also give advice through correspondence when they are not assembled. They consist of some of the highest level scientific people that we know.

Mr. KIRWAN. When did this program go into being?

Mr. JENSEN. 1953.

Mr. KIRWAN. And we have not had any real developments yet? We know that the Navy took salt out of the water during the war.

Mr. JENKINS. Mr. Chairman, I believe that the group of advisers who met would not have, themselves, voluntarily made that one recommendation, No. 11, unless they had thoroughly reviewed every bit of progress that had been made.

Mr. KIRWAN. How did they evaluate the present activity?

Mr. JENKINS. First, they were sent complete informational material on everything that has been done——

Mr. KIRWAN. Did they visit, or go through, the plants to review your projects firsthand?

Mr. JENKINS. Some of them had been to a number of the pilot plants and laboratories.

One of the advisers, Mr. Howe, from the University of California, visited the plant in North Carolina, at the expense of his university, and many of our other research projects.

Mr. KIRWAN. I would like for you to put into the record what plants and projects were visited, together with the names of the committee members involved. Please give us all of the details on that.

Mr. JENKINS. Yes, sir.

(The material referred to follows:)

As it will be necessary to obtain from the advisers themselves the specific information as to the laboratories or pilot plants which each has visited, and since this will take some time, we are offering the committee the information based upon our own knowledge of the advisers' activities in the past as follows:

Prof. Everett Howe, alternate for President Sproul, University of California, has visited, at non-Federal expense, the pilot-plant work at Wrightsville Beach, N. C.; the experimental work of Carrier Corp., Syracuse, N. Y.; the Ionics Corp. at Cambridge, Mass.; the Badger Manufacturing Co. work on the Hickman still at Cambridge, Mass.; the Griscom-Russell distillation research at Massillon, Ohio; the solar distillation work by Dr. Telkes at New York University; the Bjorksten Laboratories working on solar distillation at Madison, Wis.; and, in addition, has visited related work at a number of the manufacturing organizations.

Dr. Koenig, at his own expense, has visited laboratories or discussed, personally, with the principal investigators, contract work as follows: Bjorksten, Hickman, Ionics, Inc., Nuclear Development Associates, Texas A. and M., Dr. George Löf, Dr. George Murphy, Professor Howe, University of California, and Dr. A. P. Black, University of Florida. He also has visited others working in this field who are not contractors, including Texas Electric Service Co., Permutit Co., American Machine & Foundry, Maxim Silencer, Rohm & Haas.

It is known that Mr. Sheppard Powell has made a number of visits to those working in this field, including Kenneth Hickman Laboratories at Rochester, N. Y., Maxim Silencer Co., Griscom-Russell Co., and others.

Additional information as to specific inspections of this nature is being sought from the advisers themselves.

LEVEL OF PROGRAM

Mr. KIRWAN. Who first suggested the annual figure of $1,355,000? Who first suggested that figure for the next 5 years?

Mr. JENKINS. I think it would be difficult to go back in history and say who did this first, because I would not——

Mr. KIRWAN. Do you mean to tell me that if you had a meeting of this group of scientists that you did not have a secretary there to take notes?

Mr. JENKINS. There were notes taken.

Mr. KIRWAN. Then there would not be much difficulty to get the name of the person who recommended it?

Mr. JENKINS. I do not follow your question. The $1,355,000 is a figure which is well known to almost everyone well acquainted with the program. It was not originated during the advisers' meeting.

Mr. KIRWAN. Who first suggested it?

Mr. JENKINS. This figure has been discussed over a period of many months and I do not know who first suggested it.

Mr. KIRWAN. Somebody suggested it, to take it in front of this committee. Who was it?

Mr. JENKINS. I would have to check.

Mr. KIRWAN. Did you recommend it or did one of the scientists? Who recommended it?

Mr. JENKINS. As I recall the meeting on that day centered around, first, appropriations and the need for acceleration, the real urgency of water supplies in this country. That subject was covered and then there was a discussion, as I recall, of legislation pending in the Congress. Then there was a discussion as to whether the new legislation, if enacted, would affect the present research and development program and there were many expressions, oral and not reported, but many expressions from these advisers that the present program should stand on its own feet and that it should not be diluted by some new program that might be authorized and that the maximum amount, prorated share annually of the remaining authorization should be used each year under the present——

Mr. KIRWAN. Do you not think it would have been of great help and assistance to this committee if you had a stenographer in the room to take down on paper the discussion that occurred? Here is a man now taking down the notes of what is being said over this table and we are going to let the Congress and the whole United States read those notes.

Do you not think for our information it would have been of great help to see what those brilliant men said?

We do not have a thing in the world to tell what went on in that room.

Can you produce the hearings for us?

Mr. JENKINS. Mr. Chairman, I apparently did not understand you. You asked me earlier about a report that was written. There were some stenographic notes taken.

Mr. KIRWAN. Do you have any hearings printed of what the committee members said on that day when they came up with this recommendation for spending $1,355,000 for the next 5 years? Do you have all of those notes that were taken down that you could turn over to the committee so that we could read them and see what transpired there?

Mr. JENKINS. Yes, sir; but they are not verbatim.

Mr. KIRWAN. Please furnish those for the committee.

Mr. JENKINS. We will be glad to do so.

Mr. KIRWAN. We want to read them to see what took place in the room and then we are bound to find out who made the recommendation for this $1,355,000 and also what progress they feel has been made in the program. It must be in those hearings.

Mr. JENKINS. The progress in process developments, you mean?

Mr. KIRWAN. Yes. We can read what took place, what ideas were exchanged, and what they recommended.

Mr. JENKINS. May I make this clear? That group is merely a group of advisers to the Secretary and that group did not——

Mr. KIRWAN. Who are these men who recommended this?

Mr. JENKINS. The Secretary and the staff of the Department then took those recommendations and considered whether or not the Department should accept them.

Mr. KIRWAN. Please do this then. We have to appropriate the money so get us the hearings of what took place in that room so we can have the same information that the Secretary received as a basis for requesting these additional funds.

I am interested in this program, and I want to get the information that you people got to prompt you to come up here in just a couple of months after we gave you your request for 1959 which was $100,000 more than the current year. Surely it will be enlightening, or should be, and that is the information that this committee wants.

PILOT PLANTS

One hundred thousand dollars is requested for engineering designs and specifications for a medium-sized pilot plant for the W. L. Badger distillation process.

Mr. JENKINS. Yes, sir.

Mr. KIRWAN. What would be the total cost of this pilot plant?

Mr. JENKINS. The total cost of the plant, when built, is estimated to be about $1.3 million.

Mr. KIRWAN. Where do you intend to build it?

Mr. JENKINS. We have not made a site selection.

Mr. KIRWAN. If my suggestion would mean anything, I have been down to Pensacola and to San Diego, and they have many buildings there at your disposal. I do not want to see you building any more buildings if we can get away from it, because there are many already available.

Off the record.

(Discussion off the record.)

Mr. JENKINS. This is a pilot plant, similar to the one in this photograph. It consists of boilers and pumps and so forth.

Mr. KIRWAN. The original 1959 request, which was approved, included funds for preliminary engineering designs and studies on this pilot plant. Why are these not adequate for 1959?

Mr. JENKINS. Under the original request, it was stated, and I think I stated it, that the funds would be used for starting the designs and those would be preliminary designs only. It was thought that that would probably come late in the year. The progress which has been made now clearly justifies starting detailed designs, and early in this coming fiscal year.

Mr. KIRWAN. It has been previously testified that this pilot plant would not be built until experiments on the prevention of scaling were successful. What is the status of these experiments? Are they successful?

Mr. JENKINS. Very successful so far. I was down there last week and in fact, if I might quote Mr. Badger, he said: "I am scared because nothing has gone wrong so far and usually we have something go wrong with one of these experiments."

Mr. KIRWAN. The plant will be built within the existing authorization?

Mr. JENKINS. The $1.3 million?

Mr. KIRWAN. Yes.

Mr. JENKINS. I would say not. That would take a very large portion of our remaining funds, if that were to be done, and it would cut into the research and development activity.

Mr. KIRWAN. Can you tell me why you are designing it, if you do not have the authorization?

Mr. JENKINS. Yes, sir. That is the next step. We have the authorization to build it now. We have the authorization to design it.

Mr. KIRWAN. Do you have the monetary authorization?

Mr. JENKINS. We are asking for additional funds for it today.

Mr. KIRWAN. You are asking for it today?

Mr. JENKINS. The funds for the design work only.

Mr. KIRWAN. Not to cover the $1.3 million. You have something in here in the amount of $550,000 for "Salaries and expenses of the Office of Saline Water."

Mr. JENKINS. That is the entire item, Mr. Chairman.

Mr. KIRWAN. This building costs $1.3 million and here you are asking for $550,000 for salaries and expenses for the Office of Saline Water.

Mr. JENKINS. Those funds are for various purposes that I have discussed.

Mr. KIRWAN. Yes; but that does not cover this item of $1.3 million for this pilot plant.

Mr. JENKINS. I believe Mr. Strobel has the answer to your question. Would you like to state it?

Mr. STROBEL. Mr. Kirwin, we are not proposing that the funds we are asking for now cover the building of the plant. Your question was, why are you going to have detailed engineering drawings and specifications if you do not have the funds available to build it. Well, it is a step toward the building of the plant. It is a step toward trying to speed up the program and this will take considerable time to get these detailed drawings and specifications. They will be useful when the time comes to build the plant.

Mr. KIRWAN. Yes; but you would not construct it without an increase in your present overall monetary authorization. I repeat it would help our committee a great deal if we could get the minutes of the Advisory Committee's meeting to review the basis for its recommendations to build these pilot plants.

All we have is the press release that came out saying the Department took the word of this committee. Let this committee have the minutes so we can be fully informed of what transpired during that meeting.

Mr. JENSEN. Were there minutes kept of that meeting?

Mr. JENKINS. Yes, sir; two stenographers took notes, but not verbatim notes.

Mr. JENSEN. Were there recommendations made by that Advisory Committee? For instance, as to what process showed the most promise and how this money was to be spent and where it be spent?

Mr. JENKINS. No, sir; that Committee did not get down to the details of individual processes. We have consultants who do that and who are paid to do it.

Mr. JENSEN. All right, but the facts are that this Advisory Committee made no recommendations, black on white; is that right?

Mr. JENKINS. They made those recommendations.

Mr. JENSEN. Those recommendations mean exactly nothing, Mr. Jenkins. They do not give us any information on which they based their recommendations. Certainly I want to be just as fair as I can be. As you know, I have been greatly interested in this program just as the chairman and every member of this committee, but if this release constitutes the report of that committee, then I say it is not even worth the paper it is written on, because, Mr. Jenkins, they do not tell us on what basis they made these recommendations.

Is that not a fact, Mr. Jenkins, that you have nothing, black on white, so far as the recommendations made by this Advisory Committee are concerned, other than this release?

Mr. JENKINS. We have the stenographic notes of their various comments and views and discussions.

Mr. JENSEN. You have that black on white?

Mr. JENKINS. Yes, sir; in stenographic notes.

Mr. JENSEN. In that they expressed their views?

Mr. JENKINS. Yes, sir.

Mr. JENSEN. As to what process was showing the most promise, or what they recommended that you do to further this great program?

Mr. JENKINS. Yes, sir; but they did not get down into the details of one process as against another process.

Mr. KIRWAN. Why did you not keep them there for a week, if necessary, to get down into the details?

You say there are no details that you can present to the committee, but the group that preceded you in this room, had all the answers as to the basis for their request.

PROGRESS OF RESEARCH PROGRAM

Mr. JENSEN. Mr. Chairman, I wonder if Mr. Jenkins could give us in his own words something on the progress that has been made on these different processes since he last appeared before the committee?

Mr. JENKINS. Yes, sir; I will be glad to do that.

Mr. JENSEN. Could you do that now? May we have a statement?

Mr. KIRWAN. Of the progress made?

Mr. JENSEN. What progress Mr. Jenkins feels and knows has been made in this program since he last appeared before this committee.

Mr. KIRWAN. Yes, please insert a statement in the record and summarize the progress of what took place since the last time you appeared and requested the increase of $100,000.

(The statement requested, summarizing progress, is as follows:)

PROGRESS IN THE RESEARCH AND DEVELOPMENT PROGRAM OF THE OFFICE OF SALINE WATER SINCE REGULAR APPROPRIATION HEARINGS IN JANUARY 1957

During the year the development efforts were directed toward those processes which showed promise of providing lower cost means of converting saline water to fresh, as compared to that possible with conventional methods. Also the research effort continued in the search for new approaches which might eventually be of even greater significance in attaining low-cost goals.

DISTILLATION PROCESS

The major development in distillation was the establishment of the small pilot plant experiments at Harbor Island, N. C. Experimental work was begun on the rotary vapor compression, 25,000-gallon-per-day still, and also on the

experimental equipment designed for scale and corrosion research in connection with multiple-effect evaporators, using long tube vertical evaporators. The work is continuing, with present indication being that both processes, particularly the multiple-effect system, will show economic advantages over previous methods. A study on low temperature flash evaporation was completed and showed that this system could be promising under certain conditions. More research is indicated. Additional studies on forced circulation and vapor compression also pointed out the need for additional development work. In addition, the development of a small rotary still was begun and a prototype is now being built for tests. The work has been carried out by means of contracts with Badger Manufacturing Co., Battelle Memorial Institute, W. L. Badger & Associates, Inc., Whiting Corp., Griscom-Russell, Yale University, and in Government laboratories of the Bureau of Reclamation.

SOLAR PROCESS

The major development has been the initiation of an integrated solar still development program at a seashore test site near Port Orange, Fla. In that program a number of prototype solar stills will be tested and further developed. These still are based upon previous research carried out under the saline water program. Work has now begun on the first installation, which will be a deep basin type solar still covering an area of about 2,500 square feet. The contractors for the various research and development activities in solar distillation include Battelle Memorial Institute, New York University, Bjorksten Research Laboratories, and Dr. George Löf. In addition, there is a cooperative agreement with the DuPont Co.

PROCESSES UTILIZING MEMBRANES

Research and development has continued on four processes: Electrodialysis, osmionic, reverse osmosis, and transport depletion. Research continued on several approaches for improving membrane properties. In the osmionic process, a completely new development, a small laboratory demineralizer was constructed and tested, and a small prototype unit has been built. Testing of electrodialysis equipment continued and, recently, negotiations were completed for purchase of Dutch-developed equipment for tests. Research continued on reverse-osmosis process, particularly in efforts to improve membranes, so that practical application will have greater promise. Research was initiated on possible use of biological membranes in salt-water conversion. Work has been carried out by the National Bureau of Standards and the Bureau of Reclamation laboratories at Denver. Contractors are Polytechnic Institute of Brooklyn, University of Florida, Southern Research Institute, University of Oklahoma, and Resources Research, Inc.

FREEZING PROCESS

Significant progress was the further development in the freeze-evaporation process. Equipment was designed, built, and placed in operation, which made it possible to overcome one of the major problems in freezing methods; that is, the problem of removal of residual or entrapped brine from the ice crystals. Elements of the process are being investigated and tested. The next step recommended is the building of a small pilot plant. One phase of the zone-freezing research was completed, with a recommendation from the contractor for additional development. A study of ice-crystal formation was also completed, and results obtained of use generally in freezing processes. Research was initiated on a direct freezing cycle in order to determine its potential technical and economic feasibility. Contractors included the Carrier Corp., Battelle Memorial Institute, Applied Science Laboratories, and Cornell University.

OTHER PROCESSES

Solvent extraction.—Development continued during the year with sufficiently promising results, indicating the next step would be the building of small pilot plants. A study was completed on the possibility of combined nuclear energy with various distillation systems. Promising approaches were uncovered. Additional work is planned. Contractors were Texas A. and M., Research Foundation on Solvent Extraction, and Fluor Corp. on the nuclear-energy combination.

Reference is made to the saline-water conversion report for 1957 for addi-

tional details on individual processes. That report also included a review of the many other activities of the Office of Saline Water.

SUMMARY OF PROGRESS SINCE 1952 BY THE OFFICE OF SALINE WATER

The research and development program has produced the following tangible results to date:

The number of process groups has been reduced from 19 to 6. Nearly 1,000 proposed ideas have been evaluated, and over 60 studies initiated as a result thereof. In addition, a great deal of information has been developed, correlated, and disseminated to interested persons, groups, and governmental organizations throughout the world—all by the small technical staff assigned to the Office of Saline Water.

One of the three major distillation processes, vapor compression, has been improved by the Hickman still so as to produce water at about half the cost in 1952, with still further improvements being made in the pilot plant in North Carolina.

Another distillation process, the multiple effect W. L. Badger process also in pilot-plant operations in North Carolina, definitely promises cost reduction even much greater.

The third distillation process, flash distillation, has been designed in single low-temperature stage and shows very promising possibilities for certain uses where heat is available.

Through efforts of the Office of Saline Water entirely, use of heat from atomic energy is being developed for saline-water conversion.

One brackish-water process has been carried through the pilot stage and to commercial stage for the first time, and is under intensive further improvement in Government laboratories in Denver. Another (osmionic) has been completely conceived, researched, developed, through small pilot plant, and offers exceptional advantages where fuel is scarce or expensive.

Three others—osmosis, solvent extraction, and transport depletion—have been conceived, researched, brought to small pilot stage, indicating future costs one-half and one-third of the 1952 distillation costs.

One freezing process has been brought up to medium pilot stage and offers possibility of cost one-half to one-forth or less that of freezing in 1952 and may be competitive, ultimately, with any other process.

Solar distillation has been investigated, the best possibilities ascentained, and 5 small pilot plants, useful in areas of suinshine and high fuel costs, are being installed and tested.

Activity the world over has been stimulated directly by the Office of Saline Water—approximately five times the work underway now as compared with 1952. The United States has taken leadership in this one of very few fields, and should hold that leadership if (1) supported with funds, sincere backing, and encouragement from the Congress, and (2) a reasonable degree of freedom to travel, exchange experiences, and inspect other work abroad. Without the latter, the United States may become a second-rate nation in saline-water development.

A detailed review of the many other activities of the Office of Saline Water is contained in the 1957 annual report on saline-water conversion previously made available to this committee.

Mr. JENSEN. This committee is responsible for appropriating the money, but the testimony which has been given by you and your staff, Mr. Jenkins, does not justify that request. We do not expect the impossible. We know that this is a most scientific problem, and we know that we cannot do it overnight. We know that we must have pilot plants, and we know that we must carry on experiments and research, but we have been going along, and this is the sixth year, and we have appropriated up to date $2,850,000. We have just appropriated $825,000 for 1959.

That makes a total of $3,675,000, and you have a total authorization of $10 million to carry on your program. You are asking this year for an addition to the $835,000 of $530,000, making a total of $1,355,000, which you would have for obligation in fiscal year 1959.

Now, you already have the $825,000 and you are allocating that to a number of different things, including development of rotary stills. You have $80,000 for that in the regular budget. For other distillations, you have $100,000 in the regular budget and you are asking for an additional $145,000. On the solar distillation, you have $95,000 in the regular budget and nothing requested here. On the membrane processes, in the regular budget you have $115,000 and you are asking for an increase of $70,000.

Is the membrane process the same process that we saw at Cambridge, or is that a different process?

Mr. JENKINS. There are several different types of membrane processes. The one we saw at Cambridge is called electrodialysis. That is the one that is the most advanced and on which we are spending considerable effort and funds. That one particular process has been placed on the market, and it produces water at costs that are higher than we would like and, therefore, we are carrying on further research to improve that process and the other membrane processes.

Mr. KIRWAN. I have a couple more questions.

Mr. JENSEN. Excuse me, Mr. Chairman.

Mr. KIRWAN. When the Department testified on the regular bill, it was stated:

> We are now to the stage where we can prepare to test the latest laboratory techniques by means of pilot plants.

Yet only $250,000, or less than half of the request, is for this purpose. The rest is for more research and administration. Why did you not stress more on pilot plants if you are now in position to go ahead with testing?

Before you answer, I will move over to another question to save a little time.

ADMINISTRATION AND COORDINATION

You have an additional request for $50,000 for administration. Congress just approved an increase of $40,000 for 1959, which makes a total of $165,000 available. Why is still another increase necessary?

Of the present staff of 13, 7 are stenographers and typists, or more than 1 for each professional. Usually, the ratio is about 1 clerical for every 2 professionals. Why do you need so many more clerks when you need scientific and engineering personnel?

Mr. JENKINS. We have a type of program which is really research and development by means of contracts and correspondence.

The correspondence that goes through the Office of Saline Water is much higher than any similar office in the Department of Interior.

Mr. KIRWAN. The thing that is strange to me is that you have 7 stenographers, and yet not 1 of them could turn out a full report on the advisory committee meeting.

Mr. JENKINS. I beg your pardon. I did advise that we had two stenographers there in the meeting.

Mr. KIRWAN. But you admitted, yourself, that you did not have a complete report of what they said, that you could give to this committee. You do not have that at all.

Any questions?

Mr. SIEMINSKI. No questions.

Mr. JENSEN. I would like to know, and I think the committee would like to know, for which of these different processes the expenditure of money might do the most good and bring about the best results. There are many types of desalting and demineralizing water processes under study. You have a new process which you are experimenting with, and I think it is comparatively new, the nuclear-energy combination. What is that? Is that a comparatively new experiment?

Mr. JENKINS. Yes; that is new during the past year. For several years, we have explored, with the Atomic Energy Commission and other people who are versed in the use of nuclear energy, the possibility of using nuclear-generated power or nuclear-generated heat. It was only last year when some of the people in my office conceived the idea of using low-temperature nuclear heat directly without going through the expensive power cycle in generating electric power. The experts in atomic energy agreed that here is a possibility for using that type of heat as a heat source in distillation and other separation processes.

We began then with an engineering firm in California, the Fluor Corp., and they made an initial study to determine the apparent economics of such a combination, which were reasonably attractive. Now we want to give them a much more advanced program to come up with some actual, preliminary designs. This is using heat directly.

Mr. JENSEN. To use nuclear heat directly in the separation processes. Is that the basic idea?

Mr. JENKINS. The heat is the same as would be used in any other plant if we burned oil or coal, except that we are using nuclear heat here for distilling water.

Mr. JENSEN. It is used in the evaporation process then?

Mr. JENKINS. The ones that we have investigated are evaporation processes, but it is conceivable that it might be applied to some of the other processes as well.

Mr. JENSEN. In your opinion, would you care to state on the record the process which you feel is showing the most promise of all of the different processes that you are experimenting with? Either on or off the record.

Mr. JENKINS. I would be glad to answer this question on the record.

There are many different types of uses and, therefore, there are a number of different types of processes that will have to be developed. There are several, each of which is showing good promise, but for different purposes.

For example, as you know, we are dealing with brackish water and with sea water. The membrane processes, particularly the electrodialysis process, is seen at the present time to be best for use on the brackish water and the distillation process——

Mr. JENSEN. Where is your pilot plant for that process?

Mr. JENKINS. The only plant that we have is the plant that we took to the field and now have it back in the Bureau of Reclamation Laboratory in Denver. We have set up the experiment of our own where——

Mr. JENSEN. It is a very small plant? Is it mobile?

Mr. JENKINS. It is mobile; the capacity is about 25,000 gallons a day.

Mr. JENSEN. It is the one we saw at Cambridge?

Mr. JENKINS. Yes.

Mr. JENSEN. Is that as far as you have gone with that experiment, just that mobile plant?

Mr. JENKINS. No, sir. We have done a great deal of other work on that particular principle. We have not built a larger plant yet.

COST OF DESALTING WATER

Mr. JENSEN. You cannot say today that you can desalt water, demineralize water, for less than you were able to do it 2 years ago?

Mr. JENKINS. Yes, sir; I can.

Mr. JENSEN. You can?

Mr. JENKINS. Yes, sir.

Mr. JENSEN. That is what I am trying to find out. I am trying to find out what progress you are making.

Mr. JENKINS. One of the major distillation processes is vapor compression.

Mr. JENSEN. Vapor compression?

Mr. JENKINS. Yes, sir. That is a vapor compression type of distillation process and it has been used in many places. Over 10,000 units were used in the war by the Armed Forces and that process has been improved by the Hickman still, which you have seen, Mr. Jensen, and we have it under test in North Carolina now. That still has reduced the cost of vapor compression materially, estimated at about 50 percent, and we believe that with further tests and improvements, it can be reduced even further.

Mr. JENSEN. What is the cost per million gallons of water for this, or a thousand gallons?

What is the lowest price of processing or desalting, or demineralizing water that you have developed up to this time?

Mr. JENKINS. On these two plants—the Hickman and the W. L. Badger process—show great promise at present. The W. L. Badger process is also under development down at North Carolina.

Mr. JENSEN. How many gallons do you process in 1 day and what is the cost?

Mr. JENKINS. That is a developmental installation. It has a small unit in which we are testing and solving one problem that has been discussed several times, the scaling problem. The design which has been prepared, on which this test plant is based, would, if built, produce 17 million gallons a day.

Mr. JENSEN. A 24-hour day?

Mr. JENKINS. Yes, sir.

Mr. JENSEN. How much would that cost?

Mr. JENKINS. It was estimated that if these experiments are successful that we are working on, that the cost would be somewhere between 40 cents and 70 cents a thousand gallons.

Mr. JENSEN. At what point of cost would water be commercially feasible? That is, for industrial, municipal, and home use?

Mr. JENKINS. The costs which can be afforded by industry, in some cases where we have records, are higher than are being paid by cities

for municipal water, and municipal water in turn is higher than is being paid for irrigation. So when we think of the practicality we think of industrial use first. We have considerable information on municipal water costs which we can obtain from municipalities, and we have considerable information on irrigation water costs which we have obtained from the Bureau of Reclamation and irrigation associations, but we have very little information on what industry can pay for water and what kind of water and where and when.

Mr. JENSEN. That should not be hard to determine. Industry should be able to tell you that.

Mr. JENKINS. One industry can tell us what they are paying but they cannot tell us what they are able to pay, and we feel we need such a survey, but this committee recommended last February that that survey be not made.

Mr. JENSEN. Should you not know the point at which industry can afford to pay for good clean pure water and then in your program work toward producing good clean water from salt and mineral water to that point in order to make it commercially economical?

Mr. JENKINS. It would be helpful if we had that information; yes, sir. Meanwhile, we are working on improvement of all of the processes just as rapidly and as well as we can, and we believe that as the costs are reduced industry will pick them up. We have people coming to us and asking for the very information you are speaking of and we have to tell them we do not have it.

Mr. JENSEN. That is all.

Mr. SIEMINSKI. Mr. Chairman, may I ask a question?

Mr. KIRWAN. Yes; go ahead.

Mr. SIEMINSKI. Mr. Jenkins, are there any interests that would like to see your efforts slow down or not succeed?

Mr. JENKINS. I do not think I would be able to say there are specifically.

Mr. SIEMINSKI. In other words, you feel the reservoir interests, the water supply systems, the utilities, would not stand in the way of your success or our success in the market if we could make fresh water as cheaply as they could?

Mr. JENKINS. I feel sure the interests you mention would not. There might be an equipment manufacturer here or there that would believe the processes we hope to develop, if we are successful, might make their processes obsolete. They, I would think, might not be too happy about our program.

Mr. SIEMINSKI. Can we say that fundamentally the following observation is sound?

Like breathing, evaporation is a continuous process in nature wherever there is water? We breathe continuously whether awake or asleep and wherever there is water, is it true that water is evaporating day and night, depending on humidity conditions?

Mr. JENKINS. Yes.

Mr. SIEMINSKI. Would you then believe that a float placed over a body of salt water where the sun is rather frequent could extract fresh water by condensation in the evaporation process?

Mr. JENKINS. Yes; and we are working on that approach.

Mr. SIEMINSKI. You have air tunnels to test the strength of airplanes. Could you not have "salt-air" tunnels, so to speak, to test

this process? Tunnels to suck in air and extract moisture from it, such air, of course, being in flow over salt water.

Mr. JENKINS. That could be done. It has been proposed to us a number of times. When we calculate the heat losses due to the large reservoir of water beneath such float we find the losses are so great it would be more efficient if we built these evaporation pans separately. The whole thing is a matter of economics.

Mr. SIEMINSKI. I sometimes think nature is one of our greatest instructors. We see birds flying and we create an airplane. In Hawaii there is an island where there is the greatest rainfall of any place on earth. It sits in the ocean. Evaporation is steady. Clouds are low. They hit the cliffs and the rainfall is terrific. I am wondering if in any of your studies you are simulating nature in an effort to get fresh water from salt as nature does on that island in Hawaii.

Mr. JENKINS. Yes. Our entire field of solar distillation is from that approach. The question is the capital cost. Whether it be open ponds or closed pans the cost per square foot as related to the vaporization determines the economy.

Mr. SIEMINSKI. Did we use that kind of reasoning when we undertook the Manhattan project? When we were engaged in the Manhattan project we realized we needed something that guaranteed victory, and the cost was not significant, the result was what we wanted. Here we have 2½ billion people on earth and in another generation or two there will be significantly more and the struggle for existence and the pressures of living in peace will be greater, especially at the turn of the century, and we all have children or grandchildren who will meet that pressure. We in our lives, I hope, are over that type pressure, having lived through three wars, but do we have the moral equivalent in peace, as we did in war, to produce enough fresh water not only to make the desert bloom but to feed the population and industrial needs of the future? And as to any equipment manufacturers who might not want this program to succeed, their grandchildren will reflect their shortsightedness. It is they who will have to scramble for survival on an earth with mounting pressures. The cost at the moment, though quite important, should not deter our pursuit in peace, while there is time, to shower this earth with all the fresh water it needs. What is the picture as you see it?

Mr. JENKINS. Mr. Sieminski, this question was raised 3 years ago, as I recall, at the time the saline water program was being considered in a Senate committee headed by Senator Anderson. One of the witnesses, Dean Sherwood of MIT—this was following the meeting so it is not on the record—but Senator Anderson asked Dean Sherwood almost the same question, "Why can't we push this forward like we did the Manhattan project?"

As I recall, Dean Sherwood's reply was that this is an entirely different subject. In the Manhattan project we did not care how much money we spent. We spent $2 billion producing the first atomic bomb. The objective was to get a bomb that would explode regardless of the cost. Here our one and only objective is to reduce the cost, and whether you can do that by pouring a large sum of money like $2 billion in the project, you might end up with the same cost you have now. So it is a different problem.

Mr. SIEMINSKI. The American people are aware of this project. We want it to succeed. And while we can afford the time, we want to use our ingenuity to bring the cost in line with our economy so it will not be disrupted. We see eye to eye on that?

Mr. JENKINS. Certainly we feel that way in the Department. However, so far there has not been an appropriation made since the program was extended in 1955 that was in the full prorated annual amount that was provided for in that legislation.

Mr. SIEMINSKI. So that, if the chairman is on the right track when he insists that we go ahead, we should do so with the wisdom of the best economy we can afford?

Mr. JENKINS. Yes, sir.

COST OF PILOT PLANTS IN PROGRAM

Mr. KIRWAN. Supply for the record the total cost of each pilot plant for which design money is requested in the supplemental and whether the construction cost can be handled within the existing monetary authorization. Put that in the record.

(The information follows:)

The two types of plants for which some design money is requested in the supplemental are on the W. L. Badger distillation process and the low temperature difference process. For the sizes presently contemplated as reasonable for design purposes, the construction of those plants is roughly estimated at $1.3 million and $1.5 million, respectfully. While those construction costs could be handled within the existing monetary authorization, they would exceed the average annual rate under existing authorization to the extent of jeopardizing or eliminating the existing program of research, development, and small pilot plants.

It is only from the designs themselves that the actual cost of plants can be estimated accurately. That is one of the major purposes of the design. In this way design itself is an important research and development function from which certain data needed in the overall development of a process must be obtained. In fact, proceeding with construction may be determined by the result of the designs, just as laboratory research may determine the desirability of proceeding further. Thus, design need not necessarily await decision to construct. On the contrary, that decision may actually hinge upon the results of the design.

Mr. KIRWAN. All right; thank you, gentlemen.

TUESDAY, JUNE 24, 1958.

GEOLOGICAL SURVEY

SURVEYS, INVESTIGATIONS, AND RESEARCH

WITNESSES

THOMAS B. NOLAN, DIRECTOR
ARTHUR A. BAKER, ASSOCIATE DIRECTOR
FRED E. STEARNS, BUDGET OFFICER
PAUL E. KLOPSTEG, ASSOCIATE DIRECTOR, NATIONAL SCIENCE FOUNDATION

Program and financing

	1959 presently available	1959 revised estimate	Difference
PROGRAM BY ACTIVITIES			
Direct obligations:			
1. Topographic surveys and mapping	$13,552,000	$13,725,000	+$173,000
2. Geologic and mineral resource surveys and mapping	8,750,000	12,110,000	+3,360,000
3. Water resources investigations	11,185,000	11,465,000	+280,000
4. Soil and moisture conservation	160,000	160,000	
5. Conservation of lands and minerals	2,114,000	2,190,000	+76,000
6. General administration	1,154,000	1,248,000	+94,000
(*a*) Special-purpose buildings	75,000	75,000	
Total direct obligations	36,990,000	40,973,000	+3,983,000
Reimbursable obligations: No change.			
Total reimbursable obligations	16,070,000	16,070,000	
Total obligations	53,060,000	57,043,000	+3,983,000
FINANCING			
Unobligated balance brought forward	−475,000	−475,000	
Advances and reimbursements from other accounts	−8,619,000	−8,619,000	
Reimbursements from non-Federal sources	−7,451,000	−7,451,000	
Unobligated balance carried forward	400,000	400,000	
Appropriation	36,915,000	40,898,000	+3,983,000

Object classification

	1959 presently available	1959 revised estimate	Difference
Total number of permanent positions	6,530	6,834	+304
Full-time equivalent of all other positions	666	684	+18
Average number of all employees	6,927	7,241	+314
Number of employees at end of year	7,560	7,860	+300
Total personal services:			
Permanent positions	$35,020,000	$37,893,000	+$2,873,000
Positions other than permanent	2,330,000	2,405,000	+75,000
Other personal services	400,000	405,000	+5,000
Total personal services obligations	37,750,000	40,703,000	+2,953,000
Direct obligations:			
01 Personal services	26,300,000	29,253,000	+2,953,000
02 Travel	1,920,000	2,040,000	+120,000
03 Transportation of things	230,000	250,000	+20,000
04 Communication services	330 000	350,000	+20,000
05 Rents and utility services	550,000	575,000	+25,000
06 Printing and reproduction	620,000	630,000	+10,000
07 Other contractual services	1,435,000	1,550,000	+115,000
Services performed by other agencies	375,000	390,000	+15,000
08 Supplies and materials	2,077,000	2,177,000	+100,000
09 Equipment	1,535,000	1,955,000	+420,000
11 Grants, subsidies, and contributions	1,580,000	1,765,000	+185,000
13 Refunds, awards, and indemnities	20,000	20,000	
15 Taxes and assessments	35,000	35,000	
Subtotal	37,007,000	40,990,000	+3,983,000
Deduct charges for quarters and subsistence	17,000	17,000	
Total direct obligations	36,990,000	40,973,000	+3,983,000
Reimbursable obligations: No change.			
Total reimbursable obligations	16,070,000	16,070,000	
Total obligations	53,060,000	57,043,000	+3,983,000

Mr. KIRWAN. The committee will come to order. We have before us the Geological Survey. Mr. Nolan, do you have a statement?

Mr. NOLAN. Yes.

GENERAL STATEMENT

The long-range minerals program that Secretary Seaton recently presented to the Congress is designed to strengthen the economy of the country both by improving the capacity of the mining industry to operate efficiently and effectively as well as to assure the future mineral potential of the Nation. The program which the Geological Survey is presenting to the committee today is a part of this program and has been developed to contribute to both of these objectives.

The work planned by the Survey is expected to lead to the discovery of new guides to ore deposits as well as to the better understanding of conditions controlling ore deposition; such new developments will in turn yield new prospecting tools and techniques. These not only will enable our mineral-producing industry to carry out its exploration functions more effectively, but will assure the Nation adequate future supplies of the mineral raw materials on which our economy is based.

The need to maintain a strong and efficient domestic mining industry is generally recognized and accepted; without one we not only jeopardize our defense position, but we also dislocate our basic economy which is founded on an adequate supply of mineral raw materials. Much of the recent discussion about a suitable minerals policy has concerned the Government's role in maintaining the industry's

well-being through the provision of an adequate return for its products. Equally important in the longer run, is assistance to the industry that will make it possible to carry out its activities more effectively and economically. The minerals research program proposed by the Geological Survey in these estimates is aimed at doing just this, and hence is most appropriately an integral part of the national long-range minerals policy.

Currently some mineral commodities are in abundant supply, but present-day exploration efforts and methods appear unlikely to maintain our future mineral potential especially in the light of the new emergency demands for materials of specialized properties for such programs as missiles and satellites. And we should not forget that in the past 50 years there have been several cycles in which surpluses of minerals have been succeeded by shortages. These in turn have been met only by intensive exploration.

Each successive exploration campaign has required new exploration methods and new tools. Presently there is an entirely inadequate research program designed to achieve these. The need for a greatly expanded mineral research program aimed at improving our ability to explore for mineral deposits was the subject of a recent detailed study by a committee of the National Science Foundation. This study resulted in a well-documented series of proposals for work in the related fields of geology, geochemistry, and geophysics.

Some of the members of the NSF Committee considered that this research program might be carried out with industry support and be supplemented by parallel research in the universities and by the Federal and State geological surveys. During the past year, however, owing to the industry's depressed economy, it has been unable to support these proposals, and there has also been a decline in the magnitude of the research effort in Government, and also to a lesser extent in the universities.

It seems to me, therefore, to be most essential that this phase of the long-range minerals program be promptly and adequately supported. The proposals for minerals research that are presented in these estimates of the Geological Survey are endorsed by the National Science Foundation; and Dr. Paul Klopsteg, the Associate Director of the Foundation, is here and will present a statement on behalf of the Foundation.

We believe that the long-range mineral-supply problem can be solved only by a continuing program of carefully planned geologic mapping and geochemical and geophysical research. Lack of necessary geologic information and mineral resource data in times of crisis is not only dangerous to our national security but costly as well, when so-called crash programs are undertaken to obtain results quickly. The Soviet Union, aware of its mineral needs, has greatly intensified its efforts in minerals research.

Research in other scientific fields has provided the opportunity to apply new knowledge to the study of mineral deposits and to the improvement of our methods of ore finding. But, because the problems involved in the search for and appraisal of mineral deposits are complex and demand the training and use of a variety of highly specialized skills, adequate lead time must be allowed to further develop the necessary technical methods and scientific theories. For example,

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about 12 years of geologic research were needed to obtain the data required for an authoritative analysis of our beryllium resources—an element now used in quantities undreamed of 20 years ago. Similarly, it took a decade of geologic work in the Black Bird district of Idaho to produce the data which resulted in the discovery of important deposits of cobalt.

Additional funds are required to meet pay increases granted by the Civil Service Commission for engineers, geologists, and certain other scientists. The Geological Survey has been able to absorb these costs in fiscal year 1958 by deferring some essential purchases and recruitment.

STATEMENT BY MR. KLOPSTEG

Mr. KIRWAN. Mr. Klopsteg.

Mr. KLOPSTEG. Dr. Waterman asked me to appear for him and present this statement.

In keeping with the National Science Foundation Act of 1950, the Foundation maintains close contact with other Government agencies having responsibilities for research, to review and coordinate programs and avoid undesirable duplication. As part of its function, the Foundation some years ago established a committee of outstanding scientists as an Advisory Committee on Minerals Research. The Committee considered among other problems that of identifying and locating valuable bodies of minerals not visible at the surface of the earth, and therefore not likely to be found by traditional methods of prospecting. The Committee rendered a comprehensive report in 1956. Statements highlighting this report are the following:

The national welfare is involved in this urgent question.

Minerals research has a high public interest rating.

The prospects for spectacular improvements in prospecting efficiency are excellent.

There are few fields that promise so much at comparatively small cost under inspired planning and direction.

In view of the fact that for various reasons the recommendations of the Committee could not be acted upon by private industry, it appears in the national interest as highly important to have the Government take the lead in such matters. Executive Order 10521 of March 17, 1954, states:

As now or hereafter authorized or permitted by law, the Foundation shall be increasingly responsible for providing support by the Federal Government for general-purpose basic research through contracts and grants. The conduct and support by other Federal agencies of basic research in areas which are closely related to their missions is reognized as important and desirable, especially in response to current national needs, and shall continue.

It is clear that many of the recommendations for research contained in the report of the Foundation's Advisory Committee on Minerals Research fall within the interests and responsibility of the Geological Survey, and it is important in the national interest that the Survey be in position to carry on such research.

It is also quite obvious when one considers the nature of research in geology that this is a long-term activity, and that a crash program cannot be expected to yield quick results of the kind we have become accustomed to expect in some of the physical sciences. The basic research program of the United States Geological Survey, as stated

in its supplementary budget document for fiscal year 1959, is important to the minerals and metals industry and, therefore, to the Nation. Entirely apart from the increased recognition of the importance of basic research generally, one cannot escape the conclusion that the distinguished record which the Survey has made in the past is a warrant for confidence that important results may be expected from the research which it is proposed to finance from the supplemental appropriation being asked.

JUSTIFICATION MATERIAL

Mr. KIRWAN. We will insert into the record at this point the item on page 19 of House Document 394 and the justifications.

(The item and justifications follow:)

"GEOLOGICAL SURVEY

"SURVEYS, INVESTIGATIONS, AND RESEARCH

"For an additional amount for 'Surveys, investigations, and research', $3,983,000."

(H. Doc. 394)

Surveys, investigations, and research

Request for 12 months from July 1, 1958	$3, 983, 000
Appropriation to date	36, 915, 000
Employment:	
Average number, current appropriation	[1] 6, 927
Number involved this estimate	314

[1] Includes employment financed by reimbursements from other Federal agencies and non-Federal agencies.

PURPOSE AND NEED FOR SUPPLEMENTAL FUNDS

Supplemental funds are needed (1) to implement the program announced by Secretary Seaton on April 28, to facilitate the exploration and search for new strategic minerals required in the space age, $3 million; and (2) to meet the cost for existing personnel of professional pay increases granted during fiscal year 1958 (68 Stat. 1105), $983,000.

Geological survey

Direct obligation	Appropriated 1958 [1]	Appropriated in 1959 act	Revised, 1959	Increase	
				Professional pay [2]	Program
1. Topographic surveys and mapping	$13, 727, 000	$13, 552, 000	$13, 725, 000	$173, 000	----------
2. Geologic and mineral resource surveys and mapping	7, 751, 000	8, 750, 000	12, 110, 000	450, 000	[3] $2, 910, 000
3. Water resources investigations	9, 981, 000	11, 185, 000	11, 465, 000	280, 000	----------
4. Soil and moisture conservation	160, 000	160, 000	160, 000	----------	----------
5. Conservation of lands and minerals	2, 137, 000	2, 114, 000	2, 190, 000	76, 000	----------
6. General administration	1, 154, 000	1, 154, 000	1, 248, 000	4, 000	[3] 90, 000
Special-purpose buildings	940, 000	----------	----------	----------	----------
Total	35, 850, 000	36, 915, 000	40, 898, 000	983, 000	3, 000, 000

[1] Excludes $150,000 transferred to Office of Territories pursuant to the second supplemental appropriation act, 1958.

[2] Estimate is for cost of increases in professional pay (68 Stat. 1105) applicable to existing appropriation.

[3] See explanation of increases that follows.

An increase of $2,910,000, for geologic and mineral resource surveys and mapping, is proposed for the following subactivity:

Direct obligation	Appropriated 1958	Appropriated in 1959 act	Revised, 1959	Increase	
				Professional pay	Program
Long-range minerals program	$1,579,000	$2,578,000	$5,620,000	$132,000	$2,910,000

Need for increase now.—As a result of the Interior Department's thorough review of the problems of the mineral industry Secretary Seaton announced, on April 28 of this year, his program designed to alleviate these ills. A part of this program was to "seek supplemental funds, in the amount of $5,500,000 for fiscal year 1959 to enable the Bureau of Mines and the Geological Survey to undertake high priority minerals research projects."

Mr. Seaton's emphasis on the need to undertake such research immediately is given additional point by Russia's demonstrated capacity to place large satellites in orbit, which implies a capacity to hurl comparably large missiles to almost any place in the world. The need for this country to keep up in such a race materially shortens the lead time essential to reverse the present trend of decreasing discovery of new domestic supplies in the face of continually rising, and new, requirements. The added emphasis on the need to augment domestic supplies follows from the strategic aspects of the new world situation.

The National Science Foundation has recognized the need for a great deal more research on the geological, geophysical, and geochemical ways and means of searching for new sources of minerals and metals. The Science Foundation also recognizes the urgency of the situation through the recommendations of its Advisory Committee on Minerals Research. Recently the Science Foundation has asked the Geological Survey to undertake this program of geologic mapping and research in an effort to improve our domestic resource situation and halt the declining rate in this country.

The proposed increase would be allocated to the two major activities of the type recommended by the Advisory Committee to the National Science Foundation, namely, geologic field research and laboratory research in geochemistry and geophysics. It is especially timely in that experienced professional personnel are available on the Geological Survey for assignment to this work.

The third element in the changed situation is the fact that the minerals industry has made it plain it will not and cannot undertake the extensive geologic mapping and research needed. The mining industry recognizes the urgent need for the geologic mapping and research, but the economics of the mining industry precludes it from undertaking such an extensive program. It is peculiarly the function of Government to assume this responsibility.

A total of $8,750,000 has been allowed by Congress for the Survey's mineral-resources work for fiscal year 1959. This is approximately $1,650,000 less than the funds available to the Survey for this work in fiscal year 1958 (including direct appropriation and transfer of base from the Atomic Energy Commission). Clearly the urgent demand for increased basic mineral research cannot be met unless current timely investigations are expanded and new, high-priority projects are undertaken. The $2,910,000 in additional funds requested for this subactivity will enable the Survey to conduct a well-balanced program of basic-mineral research geared to the country's pressing need for continued economic and industrial growth.

Plan of work.—The $2,910,000 requested in this supplemental will be used to support the 14 investigations described in the material that follows. The work will be done by the United States Geological Survey. No participation by State or other agencies is planned during the coming fiscal year, although State agencies may wish to contribute toward some of these investigations in succeeding years.

Minerals research a cardinal necessity.—The National Science Foundation, through a report by its Advisory Committee on Minerals Research, called attention some 2 years ago to the dependence of the American economy and way of life on the assurance of adequate reserves of natural resources from which we derive our energy supplies and the raw materials for our industries. The report, moreover, drew attention to the increasing degree to which the discovery

of these reserves is itself dependent upon scientific research, since the easily found mineral deposits have by now, to a disturbing extent, been developed or are exhausted.

Three subcommittees of the Science Foundation Committee outlined the minimum research programs in geology, geochemistry, and geophysics needed to maintain our national discovery potential. Much of the work of the Geological Survey under the national minerals program that was authorized a year and a half ago was based on these proposals: the scale of this new Survey activity, however, was far short of that contemplated as meeting the minimum needs, and the planned expansion of the work was prevented by limitations in available funds.

The sudden advent of the space age, however, has brought forth requirements for a whole new category of mineral and mineral-fuel resources, which has been superposed on the long existent, and increasing, need for conventional raw-material resources. The rocket-generated demand for the so-called exotic solid-fuel propellents as well as a whole new category of heat- and pressure-resistant alloys and compounds have presented exploration and discovery problems for materials that were mineralogical curiosities not many years ago. And just as has been found to be true in other fields, these new needs for mineral resources have brought to light a parallel need for the basic research on which the exploratory methods and tools are based.

The Soviet Union has not been unaware of its own needs in this respect. Recently obtained information on the nature and extent of their research programs in the geological field, especially that directed toward the discovery of mineral deposits, suggests that their effort, in manpower and financial support, is in the order of 10 times that of this country.

A review of the presently authorized program of the Geological Survey in mineral-deposit research in the light of these new apparent needs indicates the necessity of an immediate increase in this research program amounting to $3 million, including $90,000 for general administrative support.

Geologic field research.—This involves geologic mapping and research in areas known to be potentially favorable for occurrences of new ore deposits. Projects have been started on modest scales in such areas as northern Maine, the southern Appalachians, and the Pacific Northwest. They will be expanded and new ones started in such areas as the desert areas in the West and the newly discovered mineral-bearing areas in the Mississippi Valley. The possibilities of such work have already been illustrated by major discoveries of zinc ore in Tennessee and iron ore in Missouri through geochemical and geophysical work in these areas by the Geological Survey.

Laboratory research in geochemistry and geophysics.—To complement the geologic fieldwork there is a growing need for laboratory research in geochemistry and geophysics that will lead to new tools and new methods to assist in exploration and discovery. Preliminary results obtained thus far give promise of major advances in our ability to find new ore bodies, and to exploit them when found. A new and extremely sensitive spectrometer has been developed that permits detection and precise location of the presence of trace amounts of the rare elements in ore minerals; another new device, a portable miniature seismograph, will greatly improve our ability to predict the thickness of the overburden of soil and gravel that conceals bedrock in many places. Similarly, laboratory studies of solutions simulating those thought to have caused ore deposition in nature suggests the possibility of a greatly improved ability to predict the natural environment in which ore minerals can be deposited.

Even more effective devices and methods appear to be in sight from research projects now underway, or planned. Proposed projects, some in collaboration with the Atomic Energy Commission, give promise of the possibility of using controlled, contained nuclear explosions in improving methods of ore finding and recovery; other projects using the techniques of modern chemistry indicate the potential of applying the theories of chemical complexes and ion exchange in developing theories of ore deposition, and some involving biologic processes may make possible the utilization of living organisms as mechanisms for mineral concentration or segregation.

NEW INVESTIGATIONS TO BE UNDERTAKEN IN FISCAL YEAR 1959

1. Geologic mapping

It is planned to commence geologic mapping in the following regions:

(1) The so-called Birmingham iron-ore belt of Alabama;

(2) The Lemhi lead-silver-zinc-bearing district, Idaho;

(3) The Ely copper-bearing belt, Nevada;

(4) The Bradshaw Mountains, Ariz. (an area in which massive sulfide deposits bearing some copper, lead, and zinc are known to occur);

(5) Christmas, Ariz. (a copper-bearing area which lies between Globe-Miami, Ray, and San Manuel mining districts);

(6) Pitkin area, Colorado (part of the Colorado Mineral Belt);

(7) The Hunters area, Washington (part of the mineral-bearing region around the Colville batholith); and

(8) In the westward extension of the southeast Missouri lead belt.

2. Elements critical to modern technology

Modern machines and weapons such as nuclear reactors, jet engines, rockets, and guided missiles call for materials that will endure conditions of excessively severe temperatures and resistance to corrosion. Indeed, technologic developments involving high temperature-high pressure chemical reactions and synthesis are already pushing conventional ferroalloys to the limits of their physical endurance. Conditions in the projected fusion reactors of the future will be even more extreme.

Because of these and other technologic developments rare and minor elements and alloys or compounds containing them which possess unusual properties, although used in small quantities, are rapidly becoming key factors in the design and production of equipment for both commerce and defense, and such materials as semimetals for transitors, alloys with superconductivity or extreme magnetic susceptibility, elements with a specific range of cross section for neutron capture, and metals and compounds that are of especially high resistance to chemical and thermal corrosion are already essential ingredients in modern design. The demand for most of these substances has come with, and because of, nuclear developments. Until recently, some of them were of little more than academic interest, hence little attention was given heretofore to their mode of occurrence. Consequently little is known of the geology of some of them, and the data needed to make authoritative appraisals of their resource potential simply do not exist.

In the last 15 years, the United States Geological Survey has been requested, on several occasions and on short notice, to search for and appraise the availability of specific rare elements or groups of such elements. In too many cases it was impossible to conduct the research and make authoritative appraisals in time to serve the purpose for which they were needed. In most instances either the analysis had to be made on the basis of inadequate data, or as in the case of uranium, crash programs had to be organized which, though sometimes successful, were inefficient and expensive. In view of the current continuing crisis, and particularly as we look ahead to development in space, it is necessary that we undertake now to study the geologic distribution and potential sources of all the minor elements. Then, when a critical need for any one of them arises, we shall be able to indicate quickly its distribution and to state authoritatively whether the material can be obtained in sufficient quantities. In the early stages of this study special emphasis will be given to geology and geochemistry of such critical substances as beryllium, rhenium, the metals of the platinum group and the rare earths.

3. Nuclear experimentation in geology

The small nuclear device recently exploded underground in Nevada fractured on the order of a million tons of rock. In different rock types and with better information on physical properties of the enclosing rocks, it should be possible to control these effects and fracture even larger volumes of material. This would free rock for mining or for selecting leaching of metals. Similar but less intense shattering might be used to increase the petroleum yield. Before the engineering uses of this tool can be evaluated, however, it must be tested in a variety of geologic environments.

In addition, the extreme temperatures and pressures now possible with these devices permit controlled experiments in the field that can be used to duplicate geologic processes free of the "scaling down" ambiguities of laboratory studies. With different nuclear devices in different geologic environments it may be pos-

sible, therefore, to duplicate ore-forming processes, or eventually to create ore deposits by complexing existing elements or by creating different ones by nuclear reactions. Similarly, we may be able to duplicate some of the high-temperature explosive geologic processes characteristic of volcanism and related ore deposition.

More accurate and more informative seismic surveys of deep crustal structures can also be made because the energy released by these devices, which is in the same range as small earthquakes, can be released as a single sharp pulse at a single predetermined point at a precisely known time.

Radioactive tracers techniques which have not been widely used in the study of geologic processes open up new possibilities in such fields as the movement of ground water, weathering, crystallization of magmas, and deposition of ore minerals.

4. Fractionation and concentration of materials by life processes

Organisms are known to cause the partition and concentration of materials in two ways: Directly, through vital functions, and indirectly, through the biogeochemical effects of organic materials. For instance, certain bacteria appear to concentrate the heavy isotopes of hydrogen, others make native sulfur from gypsum. Boron, germanium, selenium, cobalt, molybdenum, vanadium, uranium, magnesium, manganese, zinc, lead, copper, and perhaps gallium and other critical elements are also concentrated by organisms or biochemical changes in the geologic environment. Research in this field is essential to define the possible biogeochemical agents, processes, effects, and geologic environments by and in which rare elements and rare isotopes are concentrated.

Similarly, there is a crying need for allied research on the effect of ocean currents on geologic and life processes. The role of the great ocean currents in controlling climate and abundance of marine life in large parts of the globe is well known, and those that existed in the past doubtless had a controlling influence on biogeochemical processes and the deposition of economically valuable materials. With equipment devised recently at Woods Hole Oceanographic Institution, circulation patterns of the ocean can be reproduced. Experimental work could define the factors that control present-day currents, and to investigate the modification, possibility, and effect of modifying or diverting them for economic or strategic purposes. Conceivably by such means fishing grounds could be improved and even weather modified. And by reconstructing older continental outlines from geologic data, the patterns of circulation for any given geologic period might be determined and used as an aid in predicting the probable sites of economically important deposits.

5. Relation of ore deposits to metamorphism

As a first step toward determining whether ore deposits found in metamorphosed sediments were formed by concentration through metamorphic processes of metals distributed in the original sediments, a study of the Pierre shale was started in fiscal year 1958 and will continue through fiscal year 1959. As a second step in research toward a better understanding of this phase of the problem, it is proposed to explore quantitatively the role of metamorphism in contributing to or in limiting the substances in mineral deposits. By this study we hope to gain much needed data on such fundamental questions as (*a*) What are the compositions of metamorphic minerals in the different ranks of metamorphism? (*b*) What exchange and partitioning of elements take place between each of the mineral constituents as grade of metamorphism changes? and (*c*) Is this partitioning consistent within a rock of given composition, and grade respective of the area? To this end it is proposed to study selected areas in the northwestern part of the Adirondack region, New York, a region in which the rocks are known to have undergone a wide range of metamorphic affects and which contains important economic deposits of lead, zinc, iron, titanium, talc, and other minerals.

6. Experimental geochemical investigations

We plan to extend current investigations on the environment of ore deposition into laboratory studies of the hydrothermal effects of certain liquids and gases at controlled elevated temperatures; relation of the content of economically important minor constituents upon the solutions under varying conditions of temperature, pressure, and concentration; and the physicochemical conditions of formation of certain of the common ore minerals in an attempt to stimulate

the natural conditions favoring ore deposition revealed in such studies as the distribution of the elements in igneous rock, ore shoot studies, and relation of ore deposits to metamorphism. Data available on these aspects of the problem of ore deposition are relatively few, yet they are fundamental to an understanding of the processes involved.

7. Investigation of soil gases related to ore deposits

This study will include a combined field and laboratory study of gases in the rocks and soils around mineral deposits so that a better understanding may be had of such gases and of the elements moved in the gas phase, such as sulfur, selenium, uranium, nickel, mercury, carbon, nitrogen, hydrogen, and oxygen. The relation of these gases to the oxidation of ore deposits will be investigated in a number of districts having a wide range of climatic conditions to determine the influence of the gases as clues to hidden ore deposits.

8. Regional relation and origin of porphyry copper deposits and associated minor metals

The greater part of the world's copper supply comes from a type of deposit known collectively as the porphyry coppers. In the United States representatives of this type include such important producers as Bingham Canyon, Utah, Ely, Nev., and San Manuel, Ariz. It is proposed to make a thorough study of all aspects of geologic location, origin, and alteration of porphyry copper deposits. The work will consist of field and laboratory studies to determine the absolute age and the relation of porphyry copper in time and space to major structural trends and geologic provinces. The petrology of fresh and altered porphyries, the major and minor element distribution in fresh and altered porphyries, and the hydrothermal alteration including metalization will also be studied in the hope of developing data that will serve as guidelines in the search for new deposits and criteria by which to seek potential new districts.

9. Relation of ore deposits to batholithic intrusions

It is well known that many ore deposits are associated with batholiths, but many aspects about the nature of batholiths and their relation to associated ore deposits are not clear. The Sierra Nevada batholith offers unparalleled opportunity to work on these problems. It is proposed to make a broad topical study of the Sierra Nevada batholith—its constitution, structural setting, history, mode of emplacement, and related mineral deposits. For the most part the study will be a synthesis of basic data that has accumulated from geologic mapping at various places within the batholith during the last 10 or more years.

10. Physicochemical characteristics of ore shoots

The primary objective of this study is to determine the physicochemical environment of ore shoots in the veins of selected mining districts, using as a principal tool experimentally determined data on the complex but systematic interrelationships of the sulfphides of iron, zince, and copper, with and without iron oxide. The study will involve sampling of several ore shoots exposed by mine workings over several thousand feet of depth as in the Coeur d'Alene district of Idaho. These samples will be studied by chemical and X-ray methods to determine quantitative phase relationships. The results of this study should effectively supplement work being done on the nature of ore-forming solutions and on the stability ranges of ore minerals.

11. Crystal structure of ore minerals

New crystallographic techniques leading to an understanding of the fundamental atomic structure of minerals and the concurrent use of modern electronic computers for solution of these structures now make possible a new program of investigations on ore minerals for the purpose of determining positions of atoms and the facility in their arrangement for certain minerals to be host for substantial quantity of economically important elements. This kind of study is a necessary corollary to a fundamental understanding of the geochemical processes of ore mineral formation. We intend to begin our inquiry on sulfide ore minerals obtained from districts already studied by our field staff.

12. Studies of seismic noise

Studies of dispersion of the phase velocity of surface waves from distant earthquakes have been used successfully to determine the thickness of the earth's crust. Micro shocks from distant sources can be used in the same way to determine the thickness of certain layers in the earth's crust. The main purpose of

this study will be to determine the practical uses and limitations of micro shocks in seismic exploration for mineral deposits and to determine the advantages, if any, that such a new technique may have over conventional seismic and other geophysical methods used for this purpose.

13. Infrared detector

It is known that rocks in the vicinity of ore deposits may have a higher temperature than the surrounding rocks owing to active chemical alteration of sulfide minerals. It is proposed to study the possibility of using a heat sensitive device for detecting infrared radiation as a tool to determine temperature differences. Conceivably such a device could be used in an aircraft to detect differences in soil, vegetation, or rock infrared radiation.

14. Model studies

Most geophysical and many geological problems can be attacked best by studies of dimensionally correct models. It is proposed, therefore, that we undertake investigations of two-dimensional seismic models, a logical outgrowth of the studies of velocity and absorption of rock cores, now underway. Primarily it is proposed to study thermal models involving the latent heat of fusion, for the use of thermal models will make it possible to appraise the effect of latent heat on the time of cooling and temperature distribution within areas that have been affected by large intrusions of igneous rock. Information of this sort is of great importance to economic geologists, for it is fundamental both to the theory of ore genesis and to understanding of the space relations of ore deposits to parent igneous bodies.

An increase of $90,000 is needed to provide for general administrative support to the minerals program. The estimate is 3 percent of the total program increase.

INCREASES GRANTED IN REGULAR BILL

Mr. KIRWAN. Excluding the nonrecurring items for the west coast building, we just allowed an increase of $2 million in the regular bill over 1958. And the 1959 act was over $5 million greater than 1957. A total of $36,915,000 is available to the Geological Survey. What have you done to eliminate and curtail other work to meet these new requirements which represent less than 10 percent of this total?

Mr. NOLAN. The increases which the committee has authorized over the past 2 years have been to a large extent in other fields than mineral research. The bill for the fiscal year 1959 as passed by the Congress included an increase for water resources investigations. It included a partial transfer of the amount previously provided by the Atomic Energy Commission, but the total amounts the Survey has available for work on minerals for 1959 is $8,750,000 as against the 1958 appropriation of $10,414,000 and the 1957 one of $10,766,000.

The amount available for our work in improving and devising new methods, techniques, and tools for mineral exploration has decreased over the past 3 years. This has been accompanied by a decrease as of the present day of nearly 300 employees in the Geologic Division, which is the unit carrying out this minerals' activity. This has dropped in 3 years from 1,770 men and women to about 1,475 as of the present time.

I believe, as I tried to bring out in my statement, that we are facing a critical problem at the present time because of our inability to carry out the research I am confident must be carried out if we are to maintain our ability to find new deposits to maintain our mining industry.

Mr. KIRWAN. I do not approve of your saying "to maintain our mining industry." Let us go to a mineral known as tungsten, a very important mineral. The president of the Tungsten Institute testified

before the Senate committee, that they did not buy 1 pound of their own production. Is that helping the mining industry, for them not to buy 1 pound? It was not a Member of Congress that testified to that, that was a representative of the tungsten industry. That is why I object to your saying that you are going to help the mining industry. It is all right to come in and tell facts. I am for all the minerals that you can discover.

Mr. NOLAN. Perhaps, sir, I should not have limited this to the mining industry. I believe this is helping the country.

Mr. KIRWAN. I happened to have worked in the coal mines. So did Dr. Fenton. What has been done for the anthracite coal people? About three-fourths of them are out of work. They were considered so essential during the war, but they have not worked in the past 10 years. We are spending millions and millions in subsidies, but they never give a subsidy to the coal miners. Coal is the most essential mineral of them all. How far would we go without coal?

Mr. BUDGE. You can go a step further. It does not make much differences whether you find the minerals in the ground; you cannot compete with the foreign shipments coming in. The mines are closing all over the country today.

Mr. NOLAN. That is true.

Mr. BUDGE. I think that it would be better if you would predicate this upon an exploratory basis rather than maintaining the mining business, because the mining business is about shot in this country.

Mr. NOLAN. I am quite aware of some of the problems that we face as a country. I am concerned—and I believe many other people are, too, that we probably are not going to be able to solve our mineral resource picture entirely until we improve our ability to compete with foreign deposits which can be imported more cheaply. That is what I hope and expect will come out of this program; that we will achieve a better competitive position.

Mr. KIRWAN. The tungsten people did not do that.

Mr. NOLAN. I think our proposed work will help our country.

Mr. KIRWAN. Last year on the floor of the Congress they voted down the so-called help to industry because industry would not help itself. I am for helping the mining industry, or any industry. But when you give them $55 a unit for material we didn't need they ought to help American industry and not purchase it from a foreign country.

Mr. NOLAN. As I am sure you know, sir, we are not involved in the payment program.

Mr. KIRWAN. You are involved when you say you want to help industry.

Mr. NOLAN. I should have said "the country."

I hope by carrying out the activities which we propose that we will make it possible to cut down or eliminate the necessity for subsidies. That is what I meant when I said that I hoped we could make it possible to carry on our work in the mineral field more economically.

REASON FOR SUPPLEMENTAL REQUEST

Mr. KIRWAN. When the Department was before us last January we were told the 1959 request "would permit the Department to meet—and meet effectively—its responsibilities." Yet on April 28, after the bill had passed the House and had been reported by the Senate, the

Department announced it would "seek supplemental funds to enable the Geological Survey to undertake high priority minerals research projects." The exact amount was even stated at that time, which has now been submitted to us.

Why was this request not included in the regular budget submission?

Mr. NOLAN. I am not sure that I can speak to that.

Mr. KIRWAN. The Advisory Committee report to which you have referred was put out in 1956. Here you come in now 2 years later.

Mr. NOLAN. We are, sir, as you know, limited to what we can ask for.

Mr. KIRWAN. We gave $45 million in the 1959 bill over what the budget requested. We thought that the Department of the Interior did not come in for enough. We were helping out all agencies. You have had 2 years in which to come in here. Now we are being called back in for a supplemental just 5 months after you were here with the budget request which we were told was adequate.

Mr. FENTON. Over the years, Mr. Chairman, I believe the record will disclose when we were considering appropriations for the Department of the Interior, and particularly the Geological Survey, that when the item for geologic and mineral resource surveys and mapping came up, I always inquired why such a small amount was asked for that particular item. I always considered that the geologic and mineral resource surveys were among the most important things we had to consider and yet there was always the least amount of money asked for it.

Mr. KIRWAN. The committee has had the same philosophy as you have had down through the years. We have not done much trimming on the Geological Survey, but now just after the regular bill has passed, we are called here to appropriate up to $37 million for several supplementals for the Department of the Interior and the related agencies.

Mr. NOLAN. I suspect that Mr. Rice can speak on behalf of the Department and the Secretary more effectively than I, but I think perhaps there are some reasons for this failure to include the amount in our original request.

The Secretary, I believe, appeared before the Senate committee a year ago to discuss a long-range program. At that time he announced that the Department was reviewing the requirements, the needs, for a necessary and desirable long-range minerals program. He mentioned at that time that one element in it would be increased support of the research programs of the Survey and the Bureau. I think that he repeated this general need and plan at the time that he appeared before the Senate committee again this year. I cannot explain the delay that ensued between the preparation and the submittal of this present supplemental estimate, but I believe it is fair to say that the delay results from the review that the Department and the Secretary have been making over the past year.

The program has been actively under consideration by the Survey, of course, since the time this Science Foundation report was prepared.

Mr. KIRWAN. When was the supplemental estimate submitted to the Budget Bureau?

Mr. NOLAN. I do not have that date, sir.

Mr. RICE. About 3 weeks ago.

Mr. KIRWAN. Did the Budget Bureau turn down the first request?

Mr. RICE. Yes, sir.

Mr. KIRWAN. What was the reason for disallowing the request?

Mr. RICE. We were not told as to the reason. It was appealed to the Budget Bureau and approved on the basis of the appeal.

ADVISORY COMMITTEE RECOMMENDATION

Mr. KIRWAN. You have stated that the minerals research presented in your estimates is endorsed by the National Science Foundation. As I understand it, the Advisory Committee on Minerals Research, appointed by the National Science Foundation Board, actually recommended that a new independent research administrative agency should be created with a grant of funds from the National Science Foundation.

This agency would enter into contracts for research with colleges and other private organizations.

Mr. KLOPSTEG. This was the proposal of the Board headed by Dr. Boyd. The first thought the committee had was that it would ask the Foundation for this grant to get a minerals research institute founded. Later it was decided, after the printing of the report—it ought to be possible for industry to proceed without this grant in the organization of an institute, so it has not been requested. This money has not been requested of the Foundation.

Mr. KIRWAN. What total funds are available to the National Science Foundation for research grants?

Mr. KLOPSTEG. During the current fiscal year a total of about $16 million for all the sciences which the Foundation supports.

Mr. KIRWAN. The Advisory Committee estimated the cost of an independent research laboratory at more than $2 million, including operating expenses over a period of 5 years. Yet you are requesting $3 million just for the first year. How do you explain this much larger request?

Mr. NOLAN. I remember that quotation. As I recall the discussions that led to the fixing of such a figure, it was felt that it represented the cost of setting up the organization, but did not include the costs which would be required for the operations. Those were to be set, as I recall, by contributions from the individual mining companies. The $2,500,000 was to make it an organization in being. The projects that were to be carried out were to be financed by funds from the companies. One of the weaknesses of the original proposal for industry's part or support was the feeling on the part of the industry group that the results of the research that were to be achieved by this group would not be published until some years had elapsed during which time the industry members contributing the sums could take advantage of the results.

Mr. KIRWAN. What was done to get industry support?

Mr. NOLAN. Mr. Boyd set up a committee under the chairmanship of Mr. Bunker, who was a member of the group, to try to secure support from industry. Mr. Bunker's committee attempted to secure support, not only from the major, but the smaller companies, but was unsuccessful in attracting industry's support.

Mr. KIRWAN. Please provide for the record a statement listing the studies recommended by the Advisory Committee and showing the funds available for each in the 1958 and 1959 acts.

The information requested is as follows:)

STUDIES RECOMMENDED BY THE NATIONAL SCIENCE FOUNDATION ADVISORY COMMITTEE ON MINERALS RESEARCH

The Advisory Committee on Minerals Research, National Science Foundation, strongly recommended more basic field and laboratory research studies aimed at developing a better understanding of how ore deposits form. In particular, it recommended that attention should be given to determining the geologic setting of ore deposits and on learning how elements are transported and later concentrated into ore deposits in various kinds of rocks, and why ore deposits are localized. In presenting these recommendations, the committee noted that, although we are slowly improving our methods of finding ore deposits, the demands of our economy are rising faster than the discovery of new reserves and that to accelerate the rate of discovery of new deposits we need to develop new principles and techniques by laboratory and field research.

Specifically, the committee recommended a program of detailed studies of mining districts combined with fundamental studies of geologic processes—studies of districts where ore deposits are being actively exploited to determine known ore environments, and fundamental studies, such as how fluids move through rocks, and how various elements separate during geologic processes, to enhance our understanding of how and why ore deposits form where they do.

The entire minerals program of the Geologic Division is aimed at solving the kinds of problems that are outlined in the report of the Advisory Committee on Minerals Research of the National Science Foundation and many of our studies can be related categorically to those spelled out in the recommendations of the committee. Table I lists the major fields of research recommended by the Advisory Committee on Minerals Research of the National Science Foundation. The minerals program of the Geologic Division has not hitherto been planned or classified with reference to the particular nomenclature used by the authors of the Advisory Committee report, but table I shows the Geologic Division funds that are being expended in fiscal year 1958 and that are estimated for expenditure, from funds appropriated for fiscal year 1959, for investigations that fall within the compass of the work envisioned by the committee.

TABLE I.—*Geologic division funds expended in fiscal year 1958 and planned, from appropriated funds, in fiscal year 1959, for research programs of the kind recommended by the Advisory Committee on Minerals Research, National Science Foundation (1956 report)*

Recommended fields of research	Page in NSF report	Total	
		Fiscal year 1958	Fiscal year 1959
Geochemistry Subcommittee:			
Studies of fluids in sedimentary metamorphic and volcanic rocks	13	5,100	
Hydrothermal differentiation of igneous rocks	14		
Environment of depositions of ore	15	113,300	59,800
Isotopic studies related to ore deposition	16	94,250	89,150
Detailed study of intrusions with and without related ore deposits	19	33,400	38,200
Geology Subcommittee:			
Metamorphic and metasomatic processes	31	74,000	98,100
Magmatic processes	32	328,600	317,400
Pegmatitic and hydrothermal processes	32	90,900	43,300
Sedimentary and diagenetic processes	33	129,700	157,800
Weathering and enrichment	34	59,900	51,150
Synthesis of existing data	23	140,900	300,250
Regional problems	34		
Regional studies	25	1,233,300	1,659,600
Local problems	35		80,400
Inventory of mining districts	26	459,700	675,000
Special lab and field problems	36	89,800	200,750
Geophysics Subcommittee:			
Regional studies	37	390,600	491,750
Basic physical research	38	323,750	295,400
Methods of exploration	38	171,500	181,550
Total		3,748,700	4,739,600

ADEQUACY OF $8,750,000 AVAILABLE IN 1959 ACT

Mr. KIRWAN. We appropriated $8,750,000 for 1959 for geologic mapping and research. Why does the Foundation believe this amount is inadequate?

Mr. NOLAN. The reason we are asking for this additional amount was referred to in my opening statement and that is, first of all, that not all of the $8,750,000 is designed for work on minerals research. Much of it, as Dr. Fenton knows, goes into work on fuels. Some goes into work on engineering geology; and some of it goes for work in Alaska, on general geology and in the preparation of a geologic map. Only a relatively modest amount of the $8,750,000 which is earmarked for the geologic work of the Survey is designed to go into minerals research. The need for supplementing this amount as quickly as possible is the need to improve, promptly and as rapidly as we can, our ability to explore for ore. We have to a considerable extent exhausted the possibilities of the techniques and the methods which have been developed in past years. Many of them, I think it is proper to say, were developed in the Geological Survey. These include such devices as the air-borne magnetometer to supplement the use of the existing geological methods of exploration. These have been successful in finding very considerable amounts of ore, but we have to a great extent exhausted the immediate application of these existing devices. If we are going to continue to maintain our position as a mineral-producing nation, we have to continue to improve our ability to find new ore bodies.

Fifty or seventy-five years ago the ore bodies outcropped and a man with a pick could find new ones. As we exhausted these surface deposits the use of a shallow drill could find new ones. We have continually developed new methods, but they became progressively more complex and more difficult. We must continue to improve our techniques to find deposits that are more and more obscure and deeper and deeper beneath the surface. It is through continual research in the methods of exploration and the development of new tools that we are going to maintain our mineral position.

PROGRAM REVIEW BY NATIONAL SCIENCE FOUNDATION

Mr. KIRWAN. When did the Foundation last review your program?

Mr. NOLAN. I believe that there was a general review of the program of the Survey this past spring, though I am not certain.

Mr. KIRWAN. Has the Foundation reviewed your other research programs to determine what low-priority work might be curtailed or eliminated?

Mr. NOLAN. Not to my knowledge.

INCREASE FOR GEOLOGICAL MAPPING

Mr. KIRWAN. $750,000 of the increase is for more geological mapping.

Tell us how much is in the 1959 bill for this purpose and explain the urgency for undertaking this additional new mapping in 1959?

Mr. NOLAN. I am not sure that I have the figure at hand. I will be pleased to insert it in the record.

(The additional information follows:)

The 1959 bill provides about $2.2 million that can be made available for geologic mapping in connection with the minerals program. Geologic mapping is an important and integral part of minerals research to provide necessary knowldege of the geologic environment in which mineral deposits are known to occur or may be anticipated. The $750,000 included in the supplemental estimate for this purpose will provide the mapping necessary in connection with new projects to be undertaken as part of the program.

INCREASE FOR ELEMENTS CRITICAL TO MODERN TECHNOLOGY

Mr. KIRWAN. $630,000 is for "elements critical to modern technology."

Please tell us what we are spending on this now, what results you have had to date, and what new work will be started under this increase.

Mr. NOLAN. I will have to submit for the record what we are presently spending. It is very much less than that figure, as I recall. We have done some work which has been rather productive, and is indicative of the results we may expect from the additional work that we are proposing here.

I can give you two examples. One of them, I believe, you have heard of in past years, and that is the tremendous increase in our resources of the rare earths as a result of the work done at Mountain Pass in California. That was initially found through spectographic work done in the Bureau of Mines laboratory at Salt Lake. It was taken on as a field project by the Survey. Very detailed mapping was done as well as a great deal of chemical and laboratory work which led to the discovery of a very large and hitherto unknown deposit of the rare ore mineral, bastnaesite, which has in effect made this country independent of foreign sources for these rare earths.

Mr. BUDGE. Could I ask a question there? I always understood that the first rare earth's program started up in Long Valley in Idaho and that it was an independent program, completely independent of the Government. Is that not true?

Mr. NOLAN. Are you referring to the dredging done up there?

Mr. BUDGE. Yes.

Mr. NOLAN. I think that is true, sir, but if my information is correct, the amounts of rare earth that were found in the monazite sand were very, very much smaller than the amounts now in sight.

Mr. BUDGE. The Government has been buying the entire production of it ever since, and it has been going on for some years.

Mr. NOLAN. I believe I am correct in saying one of the reasons for the purchase of that product is the thorium content of the monazite, and that it has been placed into stockpiles by the Atomic Energy Commission for the thorium rather than for the caesium present in the bastnaesite.

Mr. BUDGE. I do not want to detract from the Geological Survey, but my recollection is that the first rare earth discovery and development was clear outside the Government.

Mr. NOLAN. I believe it was first reported by Survey geologists, Philip Shenon and John Reed back in the early thirties as a result of work we did in cooperation with the State. I think much of the dredging was done after that time.

Mr. BUDGE. There was no development.

Mr. NOLAN. I think that it was reported back in 1932.

Mr. KIRWAN. I note on page 18 under item 4 for which $480,000 is asked it states:

> There is a crying need for allied research on the effect of ocean currents on geologic and life processes.

Then it states:

> Conceivably by such means fishing ground could be improved and even weather modified.

What does this have to do with the mineral program?

Mr. NOLAN. It sounds a little remote, but curiously it is rather direct.

So far as we are now aware, much of our presently known high-grade phosphate deposits have been deposited through changes in the physical conditions that were brought about by ocean currents in relation to the bottom configuration of the oceans. We have considerable grounds for believing that by better knowledge and understanding of these factors, such as the nature and direction of ocean currents, and the things that control them, we are going to be much better able to predict, to determine where high grade, larger deposits of such chemically deposited materials may be found.

I perhaps could cite something which has just come to light recently as another reason for the kind of work we hope to do under this program. That is, the rather recent discovery that off the Florida coast on the gulf side conditions exist whereby there is a selective freeing of hydrogen 3, the heavy hydrogen isotope, from the normal hydrogen in ocean water by the action of certain algae and other animals that live on the bottom. This has attracted a great deal of attention among some of the people who are engaged in the atomic energy program as having a real possibility of greatly cheapening the recovery of the hydrogen 3 that is needed.

Some allied things that are coming to light as a result of this greater understanding of the part animals and plants are likely to play in mineral concentrations has been a rather recent discovery that certain plants selectively absorb from the soil small quantities of particular metals.

This has had a double value. The greatest one has been in the use of certain plants as indicators of the existence of ore deposits beneath the surface. These plants are able to selectively concentrate the metals in the soil and by burning the plants and ashing them and plotting the distribution of the metal content found it is possible to use the results as a very effective guide to certain ore bodies.

NUMBER OF NEW POSITIONS REQUESTED

Mr. KIRWAN. Three hundred and twenty-two new positions are requested. Please tell us how many vacancies do you now have: what types of new employees will be hired, and whether there are any shortages of qualified people in these categories?

Mr. NOLAN. Right now I would say that there are no vacancies. As I mentioned a little earlier, as far as the Geologic Division is concerned, the staff of that unit, which includes the group engaged in minerals work, has been dropping over the past 3 years. I have a graph here which I think shows that pointedly. This is the employ-

ment for 1956, the top line. The middle one is 1957, and the bottom one 1958. This reflects a decrease in the number of employees available for work on minerals. The high point was reached in July of the fiscal year 1956, and was 1,770. The low point is reached as of May of this year, and it is now down to 1,475. In other words, I think that we have no vacancies.

Mr. KIRWAN. You have had no decreases in the direct appropriations provided in our bill?

Mr. NOLAN. No, sir. There has been a shift, as you know, from some of the money from the Atomic Energy Commission to the Survey during this past year. So far as our ability to carry out minerals research is concerned, I think this employment shows that there are fewer people available.

PROFESSIONAL PAY INCREASES

Mr. KIRWAN. $983,000 is requested for professional pay increases.

Insert in the record a statement showing the type of positions, number of employees, and the cost involved in these pay increases.

Include also the cost of these increases during the current year.

Mr. NOLAN. I think that I have such a statement prepared and I can submit it for the record.

(The statement referred to follows:)

GEOLOGICAL SURVEY

Supplemental estimate for increased professional pay costs (68 Stat. 1105), fiscal year 1959

Title	Number	Amount
Civil engineer	364	$204,480
Electronic engineer	6	4,120
General engineer	5	4,120
Hydraulic engineer	417	250,273
Mechanical engineer	5	3,665
Mining engineer	17	10,575
Petroleum engineer	44	26,473
Chemist	99	57,440
Geologist	977	807,985
Geophysicist	43	35,115
Mathematician	5	3,580
Physicist	6	3,265
Total	1,988	1,410,045
Less portion chargeable to reimbursable programs	602	427,045
Estimate of supplemental appropriation required	1,386	983,000

The estimated cost in fiscal year 1958 of the pay increases granted during the year is $300,000.

MINERAL IMPORTS

Mr. JENSEN. Either on or off the record will you name the strategic minerals that are brought into this country?

Mr. NOLAN. In order to be accurate, I would like to submit that for the record because I believe that there is a definite meaning to "strategic," and I am not sure that I know which minerals are strategic at the present time.

Mr. JENSEN. Do not confine it to strategic minerals alone, but include also minerals necessary in the manufacture of commodities that are generally used and sold to the general public.

Mr. NOLAN. That will pretty much take in the whole gamut of minerals.

(The information follows:)

JUNE 26, 1958.

Strategic and critical materials for stockpile purposes are defined as follows pursuant to section 2a of Public Law 520, 79th Congress:

"Strategic and critical materials are those raw or semiprocessed materials that are required for essential uses in a war emergency, and whose procurement in adequate quantities, quality, or time is sufficiently uncertain for any reason to require prior provision for their supply."

The strategic and critical mineral materials listed by ODM on September 12, 1957, are given below, together with notes as to the adequacy of domestic supply to meet peacetime (1957) consumption. Wartime requirements in general exceed peacetime needs, but under the changing strategic concepts (possibility of brief, nuclear war), war uses may be reduced except for a few materials with high temperature and special property characteristics. Materials italicized are in the most deficient supply position.

Aluminum	Manufactured, 75 percent from imported ores
Antimony	Import 85 percent of primary supply
Asbestos, amosite	Import 100 percent
Asbestos, chrysotile	Import 90 percent plus of strategic grades
Asbestos, crocidolite	Import 100 percent
Bauxite, abrasive	Import about 75 percent
Bauxite, metal grade	
Bauxite, refractory grade	
Beryl	Import 90 percent
Bismuth	Import 50 percent
Cadmium	Import 70 percent
Celestite	Import 95 percent
Chromite, chemical grade	Import 100 percent
Chromite, metallurgical grade	Import 90 percent
Chromite, refractory grade	Import 100 percent
Cobalt	Import 70 percent
Columbite	Import 85 percent
Copper	Import 20 percent
Corundum	Import 100 percent
Cryolite, natural	Do.
Diamonds, industrial — bort and stones.	Import 100 percent, synthetic process can produce some of requirements
Fluorspar, acid grade	Import 50 percent
Fluorspar, metallurgical grade	Import 65 percent
Graphite, Ceylon — crystalline and amorphous.	Import 100 percent
Graphite, Madagascar — crystalline and amorphous.	
Graphite, other than Ceylon and Madagascar—crystalline.	Nearly self-sufficient
Lead	Import 50 percent of primary lead
Magnesium	Manufacture from sea water
Manganese, battery grade, natural ore.	Import 90 percent
Manganese, battery grade, synthetic dioxide.	Manufacture from imported and domestic ores
Manganese, chemical grade, type A ore	Import 100 percent
Manganese, chemical grade, type B ore	
Manganese ore, metallurgical grade	Import 90 percent
Mercury	Import 40 percent

Mica, muscovite block, stained A/B and better	Import 98 percent
Mica, muscovite block, stained B and lower	
Mica, muscovite film, first and second qualities	
Mica, muscovite splittings	Import 100 percent
Mica, phlogopite block	
Mica, phlogopite splittings	
Molybdenum	United States produces 90 percent of world supply
Nickel	Import 90 percent
Platinum group metals:	
Iridium	Import 25 percent
Palladium	Import 98 percent
Platinum	Import 95 percent
Quartz crystals	Import 100 percent, can be produced synthetically
Rare earths	Essentially self-sufficient for cerium groups, problem could arise if demand for heavy, yttrium groups increases
Rutile	Essentially self-sufficient
Selenium	Essentially self-sufficient, part refined here from imported copper ores
Talc, steatite, block	Synthetic can meet needs
Talc, steatite ground	Essentially self-sufficient
Tantalite	Import nearly 100 percent
Tin	Import 100 percent
Tungsten	Can produce present needs at over market price
Vanadium	Present excess because coproduct with uranium
Zinc	Import 45 percent

In addition to the stockpiled minerals and metals, others are essential to our peacetime economy and vital for present military uses, and still others promise to become vital for the future technology of high temperature and special purpose materials.

Boron	Indium	Scandium
Cesium	Iron	Thorium
Germanium	Lithium	Uranium
Hafnium	Rhenium	Zirconium

Mr. JENSEN. Now then, is it not a fact that many of those minerals are brought in duty free?

Mr. NOLAN. I think so.

Mr. JENSEN. Especially the strategic minerals.

Now, were it not for the fact that we might go through the same general experience we did in World War II when the supply of these minerals from foreign countries was cut off to a very marked degree by the sinking of the ships that were bringing these valuable minerals to our shores, I would be hesitant to appropriate much money for exploration for these minerals that we are attempting to find in America. We march up the hill and appropriate money for the Geological Survey and the Bureau of Mines and for other purposes to develop our natural resources and to find these minerals and metals which are so greatly needed in our economy. Then we pass what we call the Reciprocal Trade Agreements Act and we import into this Nation from countries who have a wage scale possibly one-tenth of our own wage scale here, and so we have our own domestic mines shut down all over America, so we are marching right down the hill again,

in doing the thing that is not best for our entire economy. If we are going to be the big brother of all the world, that is a different question. I cannot see my way clear in face of the situation I just explained to vote the reciprocal-trade program that passed the House recently. I am not criticizing anyone who did vote for it. But I say again, were it not for the fact that we might face another war, God forbid, and be cut off from these supplies from around the world, I would be hesitant to appropriate the money.

During the last war we were cut off from our supply of rubber, but thank God we had a substitute. But for having great faith and confidence in the Geological Survey and the people who make up the program, I would not be anxious to appropriate this money that you are asking for. But you are going to use most of this money for exploration and research and for the finding of minerals and new supplies of minerals, and I know that you are going to be successful, so I am not too concerned about this request. I am going to tell you frankly that I wish this amount had been in the regular bill. I am going to say on the record that I am going to be quite liberal in appropriating money for this purpose because I know that the day may come when we will need all of these minerals right here so that we will not have to import them across the seas. I do not want to take any chances as far as Ben Jensen is concerned.

Mr. BUDGE. Will the gentleman yield? The only trouble with that approach is that you cannot turn these things on and off like a faucet. It takes a long time to get the mines into production. We know where the minerals are, but if we are not producing them when war comes they are no good to us.

Mr. JENSEN. And that is exactly why I want to start now trying to find them. I do not want to wait until next Tuesday or Wednesday or next year. Of course, it takes time to find them. It takes time to produce them. It takes time to process them. It takes time to know just what they will for a substitute for minerals that we are bringing into this country now from all over the world.

Under present world conditions I think time is of the essence.

Mr. FENTON. As I said awhile ago, I have always been concerned about investigations for minerals. I think over the years I have shown that. I know that it is no fault of yours, or your Bureau, that you have not gone forward as rapidly as I would have liked to see you go. However, I note that there is $3 million in here to try to remedy some of the things that we have not done. Now, I see no place in the justifications where the money you are asking for is broken down. Is it for investigation, exploration, or how do you break that down?

Mr. NOLAN. I think that we have provided in the justifications to the committee with the projects we propose to carry out and have furnished the clerk informally at his request with a statement of the dollars to be applied to each of the 14 projects.

Mr. FENTON. You do not have the amounts supplied for each of the 14 projects?

Mr. NOLAN. That will be provided for the record.

Mr. FENTON. Is there any particular ore that you are interested in? I note that you have copper here several places.

Mr. NOLAN. I think we are of course going to be concerned with the whole range of the mineral supplies that this country needs. The project which is given on pages 16 and 17 calls for particular attention to the appraisal of our position in regard to a number of metals and materials that are now becoming critical.

Mr. FENTON. That are in short supply?

Mr. NOLAN. Short supply, metals like beryllium that were mineralogical curiosities, are now becoming critical in the production of some of the specialized materials that are needed, especially in ballistic missiles. Materials formerly found entirely satisfactory are now found to be unsatisfactory because they do not withstand the very high temperatures, and the very special conditions that prevail in these new devices. We are finding, not a relatively small amount of these rather rare materials added to conventional materials will greatly improve their performance characteristics. It was not formerly necessary for materials to retain their strength at four or five thousand degrees temperature. Now it is becoming essential. We have to find and make available these materials that make these high temperature alloys possible.

Mr. FENTON. Do you propose to contract any of this out to mining companies or universities to help solve the problem or will these 300 additional employes perform all the new work?

Mr. NOLAN. That is the primary purpose of the additional employment, sir, but I think there is another thing that I might mention in regard to that. On page GS–3, there is listed full-time equivalent of other positions. These represent to a large extent men that we have on our rolls on a when-actually-employed basis. They are for the greater part men who are now engaged in teaching at universities in the field of mineral research. These are the men that we hope to bring into assist us and who will be especially helpful in bridging this gap from the present employment to the needed employment.

I think it is probably fair to say that a significant proportion of the research men in universities have this relationship with us. Many of them are former Survey men and many of them, when we are able, are brought back for summer or part-time employment during the year.

I think it is a very satisfactory arrangement, both for us and for them.

Mr. FENTON. I suppose you will also try to correct the conditions that have existed over the years requiring dependence on imports from other countries and at the same time accomplish those things we have neglected in our research and which are rather desperately needed?

Mr. NOLAN. We have not carried on as much research as I feel is necessary to protect ourselves; no, sir.

Mr. FENTON. Doctor, I know that you are doing a good job and I certainly am not going to say that I told you so, but I am concerned about some of those mining companies that the chairman spoke about.

The National Foundation has said that those mining companies cannot help in any way at all and that they are relying more upon the Government at this time.

Mr. NOLAN. We have had word recently that several of the larger companies have made very material cuts in their own exploration departments.

Mr. FENTON. That is all, Mr. Chairman.

Mr. KIRWAN. Mr. Budge?

LABORATORY RESEARCH

Mr. BUDGE. Doctor, a few minutes ago in answering a question put to you by the gentleman from Pennsylvania, Dr. Fenton, I understood you to say that you felt it was the mission of the Geological Survey to develop metals which would stand heat at 4,000 to 5,000.

Under what authority would you have that mission, from where would it stem?

Mr. NOLAN. I did not intend to say that, sir. What I had hoped to bring out was that the——

Mr. BUDGE. What was the purpose or the basis of that statement?

Mr. NOLAN. The need for these metals is increasing and the role that the Survey would play would be to assist in developing the supplies of those metals in order that they might be available to enter into commerce. We have no metallurgical responsibilities. Those are in the Bureau of Mines.

Mr. BUDGE. I understood you to say that that was part of what this money would be spent on, research of that nature. What kind of research would you do?

Mr. NOLAN. Research to find supplies and deposits of adequate amounts and in appropriate places in order that we could meet the needs.

Mr. BUDGE. You are not talking about research in the laboratory but research in the field?

Mr. NOLAN. This is mostly research in the field.

Mr. BUDGE. You say "most of it."

What is the other part?

Mr. NOLAN. There is some laboratory research that I would hope we could carry out. This would be directed toward determining the physical conditions under which the minerals containing these particular elements are stable, where they could be deposited in nature and under what conditions, in order to improve our ability to find deposits of them.

This is why I qualified my statement, that it should be accompanied by a lesser amount, but still some, laboratory research.

Mr. BUDGE. You are not about to enter into a program for determining the specific characteristics?

Mr. NOLAN. Not at all. This is what I hope the Bureau of Mines will be able to do.

APPROPRIATIONS NOW AVAILABLE

Mr. BUDGE. How much money would you have available in the Geological Survey right now for this purpose, without this appropriation, if you chose to use it for this purpose?

Mr. NOLAN. I am not sure that I can give you that off the cuff, sir, but the figure that I have is the total amount available for geo-

logical work, including transfers and repayments. The direct appropriation is $8,750,000, but as I said, that includes the work that we are doing on the mineral fuels, work that we are doing on the preparation of a geologic map of the United States, and so forth. This latter is one of our responsibilities and it is designed to help in the classification function that we carry out on mineral leasing. The figure also includes work on foundations, highway development, and the like.

My recollection of the amount, and I believe the chairman asked for a similar figure, is that it would run somewhere in the order of perhaps a million and a quarter dollars. If you wish, I can provide that for the record and I will be glad to do so.

Mr. BUDGE. I wish you would do so.

(The information referred to follows:)

The total amount available for mineral studies is $4,780,000 of which approximately $1,400,000 was allotted for the work of the Mineral Deposits Branch which is only one of the units involved in the minerals work. It was the latter figure to which reference was made in the testimony.

BUDGET REQUESTS AND ALLOWANCES, 1950–59

Mr. BUDGE. Your appropriation is in the neighborhood of $36 million, is it not?

Mr. NOLAN. Yes, sir; but that includes appropriations for topographic mapping. The total amount available for topographic mapping is $13.5 million. That does not enter into any of the minerals work at all but it is for the preparation of maps.

Mr. BUDGE. Who makes that allocation? This committee did not make the allocation. You put it in your budget justification, did you not? Isn't that the way it came to the committee?

Mr. NOLAN. It is a long process.

We made an original estimate for each of the four operating responsibilities of the Survey. We have four branches or divisions; namely, a Topographic Division, a Geologic Division, which is the one that carries on the minerals work, a Water Resources Division, and a Conservation Division.

The Conservation Division is the one that administers the mineral leasing laws.

Mr. BUDGE. On the $36 million, your agency made the determination as to what percentage should be spent in each category, did it not?

Mr. NOLAN. We made the original estimate which then goes to the Bureau of the Budget and the Bureau of the Budget revises those figures and they are then presented to this committee. It has been my understanding, sir, that the appropriation that the Congress makes to us requires that we observe these activity breakdowns and that we are not free to shift from one to the other.

Mr. BUDGE. Of this $36 million, how much did you request for this purpose?

Mr. NOLAN. Originally, from the Bureau of the Budget?

Mr. BUDGE. Yes.

Mr. NOLAN. As I recall, we requested originally $11,616,000.

Mr. BUDGE. What is the total request from the Bureau of the Budget?

Mr. NOLAN. $43 million.

Mr. BUDGE. How would that compare with the total appropriation of 10 years ago, let us say?

Mr. NOLAN. I have those figures at the office, sir, but I do not have them here.

Mr. BUDGE. Put them in the record for the last 10 years and the request for the amounts appropriated.

Mr. NOLAN. I will be very glad to do so.

We have tabulated them quite recently for the Government Operations Committee, so we have them at hand.

Mr. BUDGE. I wish you would put in the record the percentage which you requested, or the amount which you requested, in each of these categories from the Bureau of the Budget, if the requests were made in that form.

Mr. NOLAN. For the 10-year period?

Mr. BUDGE. Yes.

Mr. NOLAN. That would be the budget request as well as the budget allocation?

Mr. BUDGE. Yes.

(The material referred to follows:)

Budget requests and allowances, 1950–59, for activities of the Geological Survey [1]

[In thousands]

	Topographic surveys and mapping	Geologic and mineral resource surveys and mapping	Water resources investigations	Soil and moisture conservation	Conservation of lands and minerals	General administration	Special-purpose buildings	Total
1959—Department request:								
Original	$17,510	$11,616	$11,050	$160	$2,175	$1,425		$43,936
Revised	14,185	10,616	11,000	160	2,175	1,300		39,436
Budget Bureau allowance	13,552	9,500	10,270	160	2,114	1,154		36,750
Appropriation	13,552	8,750	11,185	160	2,114	1,154		36,915
1958—Department request	14,550	8,415	11,530	190	2,155	1,160	$415	38,415
Budget Bureau allowance	14,520	8,400	11,410	190	2,155	1,160	940	38,775
Appropriation	13,774	7,775	10,073	160	2,124	1,154	940	36,000
1957—Department request	11,855	7,728	8,800	130	1,817	870	415	31,615
Budget Bureau allowance	[2] 12,873	6,778	8,513	130	[2] 1,943	950	415	31,602
Appropriation	12,873	6,778	8,513	130	1,943	950	415	31,602
1956—Department request	11,850	5,438	6,730	150	1,710	683	516	27,077
Budget Bureau allowance	11,320	5,430	6,700	100	1,710	750	275	26,285
Appropriation	11,320	5,430	7,050	100	1,710	750	275	26,635
1955—Department request	13,000	5,960	7,425	150	1,735	750		29,020
Budget Bureau allowance	12,290	5,460	7,025	100	1,710	750		27,335
Appropriation	11,350	5,345	6,530	100	1,710	700		25,735
1954—Department request	16,675	8,300	8,500	250	1,665	790		36,180
Budget Bureau allowance	14,950	6,750	6,960	100	1,610	700		31,070
Revised Budget allowance	13,000	6,000	6,500	45	1,525	680		27,750
Appropriation	11,630	6,750	6,960	100	1,610	700		27,750
1953—Department request	13,800	6,600	6,400	41	1,500	660	5,500	34,501
Budget Bureau allowance	13,900	6,525	6,375	44	1,520	691		29,055
Appropriation	11,307	5,810	6,187	44	1,440	575		25,363
1952—Department request	10,125	6,700	8,000	150	1,450	575		27,000
Budget Bureau allowance	8,930	6,130	6,015	41	1,264	520		22,900
Appropriation	8,190	5,710	5,629	41	1,220	510		21,300
1951—Department request	13,200	5,875	10,709	40	1,135	549		31,508
Budget Bureau allowance	8,300	4,645	5,435	41	1,114	465		20,000
Appropriation	7,500	4,420	5,278	41	1,178	465		18,882
1950—Department request	13,369	5,755	5,163		1,144	356		[3] 25,787
Budget Bureau allowance	7,625	4,268	4,198		1,066	343		[3] 17,500
Appropriation	6,260	4,215	4,125	[4]	1,045	343		15,988

[1] Exeludes supplemental appropriations.

[2] Includes amounts for long-range minerals program, which were included in geologic and mineral resource surveys and mapping in the Department request.

[3] Excludes $400,000 "cooperative advance," an annual appropriation prior to 1950, but in that year appropriated to a revolving fund.

[4] Appropriated to Office of the Secretary, Department of the Interior.

Mr. BUDGE. Do you make them up for each year in separate categories?

Mr. NOLAN. Yes, sir.

Mr. BUDGE. I notice here that 10 years ago the total appropriation for the United States Geological Survey was $13,384,200. This committee has already approved $36,750,000 for this year without this supplemental.

You spoke about 300 employees taken off this particular function in the Geological Survey. By whose action is that done? Who initiated that?

Mr. NOLAN. I am not sure that there was any initiation other than the necessity that we saw to adjust our employment to the available funds.

Mr. BUDGE. Did you have higher priority items in the service?

Mr. NOLAN. So far as I am aware, sir, I do not think that we had very much option on this. These were the funds that came to us either by direct appropriation or by transfers from other groups for work in this field. This was the amount of money that we had and this was the number of people that we could employ with that money. We are not free, in other words, to transfer funds that are appropriated for work on water resources or for ground water or surface water or oil and gas leasing or topographical mapping into minerals research.

Mr. BUDGE. If you were going to have to reduce this program by 300 people and you had something as acute as what you present here today, why was that not mentioned in the hearings at the time of the regular bill?

Mr. NOLAN. I thought that I did mention it, sir. I am not sure in precisely what form, but our original budget request was $11,616,000, and I think the budget figure that was presented to this committee was for $9,500,000 and the committee allowed $8,750,000.

Mr. BUDGE. We will have to sharpen our arithmetic a little bit; but what I am trying to find out here is whether this reduction in this particular activity resulted from committee action or from administrative action in the Department or in the Geological Survey.

Where did it start?

FUNDS TRANSFERRED FROM OTHER AGENCIES

Mr. NOLAN. It did not result from action in the Geological Survey. I think it is primarily reductions in the amounts that were allowed by the Bureau of the Budget below our original request. It was in part the result of reductions in the amount of transferred funds from such agencies as the Atomic Energy Commission.

Mr. BUDGE. Incidentally, I wish you would put a statement in here of all of the funds that you have received from all of the agencies and the purpose for which they were received.

Mr. NOLAN. Yes, sir.

(The information referred to follows:)

Amounts and purpose of funds transferred from other agencies to geologic division, fiscal year 1958

Agency transferring funds	Allotment, fiscal year 1958	Purpose of transferred funds
States, counties, and municipalities.	$310,600	To conduct geologic mapping, stratigraphic studies, and geophysical surveys in areas where information is mutually desired.
Atomic Energy Commission	3,876,300	(1) To conduct geologic, geochemical, and geophysical studies of uranium-bearing and potentially uranium-bearing areas. (2) To conduct basic research on the fundamental geology and geochemistry of uranium, thorium, and other elements of interest to the atomic-energy program. (3) To conduct geologic, geophysical, and geochemical studies on problems related to testing of nuclear devices for peaceful purposes. (4) To conduct research on specific problems related to the peaceful uses of nuclear devices. (5) To conduct studies of the geologic factors affecting the safe disposal of atomic waste material. (6) To determine, by airborne radioactivity monitoring, the radioactive background of critical areas, and the effects of atomic tests on the radioactivity.
Defense Minerals Exploration Administration.	487,000	To give guidance to DMEA in all geologic matters involved in applications and ensuing contracts.
Department of the Army	1,194,000	To collect geologic data for and to prepare geologic reports topics and areas, including foreign areas that are designated by the Corps of Engineers. Work relates geology to military problems.
Department of the Navy	77,900	Geologic study of Mojave saline deposits, California, and geophysical investigation of ice and permafrost problems in Arctic areas.
International Cooperation Administration.	862,700	To train foreign Nationals and advise host governments on mineral resource problems, and to conduct geologic mapping and resource appraisals in foreign countries for ICA.
Government Printing Office	115,000	To reimburse Geological Survey for work on publications.
Miscellaneous Federal agencies:		
Bureau of Reclamation	55,000	Geologic mapping and stratigraphic studies in the Missouri River Basin to provide geologic data on construction materials and other geologic resources pertinent to the development of the region.
Bureau of Mines	32,300	To provide background geologic data for various engineering projects proposed by anthracite mining companies in Pennsylvania.
Bureau of Indian Affairs	17,000	To provide geologic maps and stratigraphic studies of selected areas of highest fuels potential in the Navajo Reservation.
Fairbanks compound	41,000	To reimburse Geological Survey for rental of Fairbanks compound.
Air Force	96,600	To conduct geophysical investigations on Fletcher's Ice Island, T-3, in Arctic Ocean, and on the Ellesmere Ice Shelf, Northwest Territories, Canada; for photogeologic and reconnaissance geologic mapping in Greenland, and for research on isotopic analyses of Arctic samples.
Other miscellaneous Federal agencies.	51,900	Small special-purpose geologic investigations of short duration.
Total	7,217,300	

Mr. FENTON. Will the gentleman yield?

Mr. BUDGE. Yes.

Mr. FENTON. That is the point I was going to ask about.

You had a total reimbursable obligation of $16,070,000. Much of those reimbursable obligations were related to your geological and mineral resources?

Mr. NOLAN. Relatively little, sir.

Incidentally, this was all in the record of the hearings last spring. The transfers for geological work totaled less than $3 million.

I beg your pardon, $3.7 million for 1959.

The largest single item of that was $1.2 million from the Department of the Army for terrain intelligence work—military geology—which has no relationship at all to the minerals problem.

Mr. FENTON. I will ask you to break that down in the Department of Defense total.

Mr. NOLAN. That was the largest single item, $1.2 million anticipated for 1959 for terrain intelligence work for the Army.

It is anticipated in 1959 there will be $825,000 for work with ICA in which we provide the professional men essential for work on the ICA program.

These 2 together constitute the 2 major elements of this anticipated $3.7 million increase above the direct appropriation. As you can see, over $2 million of that is in terrain intelligence and ICA work, neither of which contributes to our minerals work at all.

Mr. FENTON. Thank you.

Mr. BUDGE. As near as I can determine from this tabulation on page 356 of the hearings on the regular bill, you have a total this year of $13.2 million for use for this purpose?

Mr. NOLAN. Less $750,000. I think that that $13.2 million includes $9.5 million as the direct appropriation instead of $8,750,000, which was the final figure.

Mr. BUDGE. That is quite a difference from the million dollar figure you talked above a few minutes ago as being available for this purpose.

Mr. NOLAN. As I was explaining, that geological and mineral resources figure of $9.5 million, which was cut to $8,750,000, includes work on the mineral fuels. It includes work on engineering geology, and it includes work on our chartered responsibilities of preparing a geological map of the United States.

The point I was making is that of that direct appropriation for geologic work, only about a million and a quarter is designed to carry out research on minerals, as such, in the sense that we are talking about here.

Mr. BUDGE. Was this shortage one that actually stemmed from the fact that the Atomic Energy Commission did not recommend funds for you?

1956 ADVISORY COMMITTEE REPORT

Mr. NOLAN. No, sir. This program for needed research and exploration, as was brought out by the report of the Science Foundation Panel, was quite independent of any work for the Atomic Energy Commission. That report was prepared 2 years ago.

Mr. BUDGE. Yes, and printed in 1956, but what is the urgency then based on that report?

Mr. NOLAN. I think the NSF Committee felt it was urgent at that time, and it has not been implemented in any way since then. I think that many of the people in the field believe, as I believe, that it is becoming increasingly critical the longer we put it off.

Mr. FENTON. For the record, if sputnik had not erupted?

Mr. NOLAN. That is right.

Mr. BUDGE. Would you assign any priority of necessity to items in your own service there?

Mr. NOLAN. I find it very difficult to say that one of these projects is going to be more productive than another. If we could predict the results of any research, we perhaps could plan more wisely, but

this is one of the things that I think you have to face in any research program, the need to carry on several parallel lines of research in the expectation that one or more will be successful.

I cannot, and I do not think anyone can, predict which one will be successful.

Mr. BUDGE. I notice here that you received $102,000 from the Government Printing Office.

What did you do for them?

Mr. NOLAN. Mr. Stearns has told me that this is our own money. We have, and have had for many years, a map reproduction plant in which we print our topographic and geologic maps. There is a requirement that in the printing of all of our reports we submit them to the Government Printing Office for reproduction and we have to transfer to the Printing Office the total amount of money that is needed for printing. Because of the special facilities in our own map reproduction plant, the Government Printing Office pays us to print these geologic maps. We then turn over the printed maps to them and they put them in the report which is distributed.

This is the source of that item.

Mr. BUDGE. That would be interesting to follow through, would it not, under the category of redtape or something?

Are you still carrying on this program to the extent that you are still mapping every building in the United States?

Mr. NOLAN. No, sir. The topographic mapping work that we are doing is in another activity.

We do not map every building, sir, but the smallest scale that we use is 1 to 24,000. This is becoming the standard scale for topographic maps. That is 2,000 feet to 1 inch.

The other series of maps is the mile to the inch, roughly. Most of the topographic mapping is done in cooperation with the States; and the States are asking for more and more of the 24,000 scale.

We do not show all of the buildings.

Mr. BUDGE. Should not the States start paying for some of it then, if they are the ones that want it? It used to be the military.

Mr. NOLAN. The military are still asking for work to meet their requirements but the States are paying for considerably greater amounts. In 1959 we estimate a little over $1.6 million.

Mr. BUDGE. Where does that show on your receipts in financing from "Other sources"?

Mr. NOLAN. I do not have the table that you have there, sir, but it would be in that $1.6 million down at the bottom.

ELIMINATION OF WORK OF LESS IMPORTANCE

Mr. BUDGE. Thank you. I see the item on page 356.

I remember when the Secretary appeared before this committee on the regular bill and I would like to read this to you, Doctor, and see if this program is still as urgent as he indicated and whether you have actually given any consideration to what the Secretary said when he was here this spring.

This appears at page 2 of the hearings.

On the other hand, I am convinced adequate attention is not always given to the necessity of eliminating work of less importance in order to meet the additional requirements constantly placed upon the Department. The historic

tendency, it seems to me, has been to seek automatic approval of the previous year's program level and thereafter to concentrate upon additional appropriations to meet new requirements. A change in emphasis has resulted in a reexamination of past programs and at the same time consideration is given to the additional requirements. * * *

Did you do that in the United States Geological Service?

Mr. NOLAN. I think, sir, that it is fair to say that our whole program is continuously under review.

Certainly there is always a question of priorities. I think rather than have problems of curtailment our greatest problems are in the pressures that we receive for additional work.

Mr. BUDGE. That is the testimony of every agency of the Government, Doctor.

Mr. NOLAN. I think it is partly the result of the fact that the country is growing at such a rate.

Mr. BUDGE. The country has not grown 3 times—300 percent in 10 years and your appropriations have.

Mr. NOLAN. I can only answer that, sir, by expressing my own belief that we perhaps should have been more active in earlier years than we were.

Mr. BUDGE. I will quit exploring that.

Mr. NOLAN. I know that is not wholly responsive as an answer. I alluded very briefly in my opening statement to the extent to which Russia is carrying on this work.

Mr. BUDGE. We will forget that, too, because I have heard a great deal of that both on the record and off the record. I applauded the Secretary of the Interior when he made the statement I quoted a few minutes ago but it certainly does not appear to me that the individual agencies in the Department are making any survey to cut out the nonessentials—that is, not the nonessentials since nothing would be nonessential—but eliminating the work of less importance as the Secretary puts it. I have not seen any indication of that being done and that is why I asked you if it was being done in your particular agency.

Before you decided on making the new request, did you look around to see if there was anything down there that you could cut out that is of less importance, as the Secretary said?

Mr. NOLAN. It depends on to whom one talks.

I think perhaps the only response that I could make to that is that we have in our minerals work cut back a great deal over the past 3 years. I think this is illustrated by the fact that we have 300 fewer people.

Mr. BUDGE. If you cut back, what is the urgency now? That is what I have been trying to find out all along. Who initiated the cutback? The committee did not do it. You just said that you did it in the agency.

Mr. NOLAN. Because we had fewer funds to work with, sir.

Mr. BUDGE. That does not seem to be borne out by the history of the appropriations here. It seems that you put the appropriations into other categories; but you are going to furnish for the record a statement of your request to the Bureau of the Budget as to just what you requested the money for. Then we can determine where it happened.

The committee has allowed you all the funds that you requested down through the years ever since I have been on it and if there has been any curtailment, it has not been initiated up here; that is a cinch. Is that not right?

Mr. NOLAN. Yes.

Mr. BUDGE. That is all, Mr. Chairman.

Mr. KIRWAN. Mr. Nolan, how much money do you say that you have available to work on the mineral program now?

Mr. NOLAN. I would like to have the privilege to furnish that for the record. I do not recall offhand. I have the feeling it is something in the order of a million and a quarter.

Mr. KIRWAN. You have here on page 370, mineral deposit investigations, 3 million. Long-range mineral program, 2 million; so you have a total of $5,578,000 to work on.

Mr. NOLAN. I think part of the explanation of that, sir, is that a segment of that 3 million under mineral deposits investigations is for geologic mapping that was designed to advance the geologic mapping of the United States.

Mr. KIRWAN. But you are asking for an increase of $750,000 for the geologic mapping?

Mr. NOLAN. That is right, designed particularly for the exploration work.

Mr. KIRWAN. All right, Doctor.

We are glad to have had you with us.

(NOTE.—The Department later advised that $4,780,000 was now available for mineral studies.)

Mr. FENTON. Did you ever go out to explore specifically for minerals? Does your Bureau ever go out to explore or is it mostly design and mapping work?

Mr. NOLAN. We have done some, sir, but mostly we try to carry out our work to yield results that will permit the companies themselves to do the physical exploration—the actual drilling of holes and mining activities.

This is where I think we have made our greatest contribution—the development of the methods and principles and the ideas that the companies themselves can utilize in their own exploration. I think there has been quite a fine record made in this regard, which has led to discoveries by the companies themselves of a very considerable amount of new ore.

Mr. FENTON. There is no actual personnel of yours going out to explore?

Mr. NOLAN. No, sir; not in the sense of drilling holes or other physical exploration as part of development work.

Mr. FENTON. That is all.

WEDNESDAY, JUNE 25, 1958.

CONSTRUCTION, NATIONAL PARK SERVICE

LAND ACQUISITION, DISTRICT OF COLUMBIA STADIUM

WITNESSES

CONRAD L. WIRTH, DIRECTOR, NATIONAL PARK SERVICE

NATIONAL PARK SERVICE CONSTRUCTION

Program and financing

	Presently available	Revised estimate	Difference
Program by activities:			
1. Buildings, utilities and other facilities	$21,869,000	$21,869,000	
2. Acquisition of:			
(a) Lands	1,533,138	2,733,138	+$1,200,000
(b) Water rights	90,330	90,330	
Total obligations	23,492,468	24,692,468	+1,200,000
Financing: Unobligated balance brought forward	−3,492,468	−3,492,468	
Appropriation	20,000,000	21,200,000	+1,200,000

Object classification

		Presently available	Revised estimate	Difference
	Total number of permanent positions	368	368	
	Full-time equivalent of all other positions	346	346	
	Average number of all employees	710	710	
	Number of employees at end of year	375	375	
01	Personal services:			
	Permanent positions	$1,664,800	$1,664,800	
	Positions other than permanent	1,358,000	1,358,000	
	Other personal services	101,000	101,000	
	Total personal services	3,123,800	3,123,800	
02	Travel	365,000	365,000	
03	Transportation of things	78,000	78,000	
04	Communication services	50,000	50,000	
05	Rents and utility services	115,000	115,000	
06	Printing and reproduction	38,000	38,000	
07	Other contractual services	2,750,000	2,750,000	
08	Supplies and materials	1,425,000	1,425,000	
09	Equipment	405,000	405,000	
10	Lands and structures	15,006,368	16,206,368	+$1,200,000
11	Grants, subsidies and contributions	108,550	108,550	
13	Refunds, awards and indemnities	1,000	1,000	
15	Taxes and assessments	26,750	26,750	
	Total obligations	23,492,468	24,692,468	+1,200,000

Mr. KIRWAN. Mr. Wirth, you have a request under "Construction" for $1,200,000 to acquire lands for the District of Columbia Stadium. We will insert the item on page 20 of House Document 394 and the justification.

"CONSTRUCTION

"For an additional amount for 'Construction', $1,200,000, to remain available until expended."

This proposed supplemental appropriation is to provide for the acquisition of lands for a stadium in the District of Columbia pursuant to the District of Columbia Stadium Act of 1957 (Public Law 85–300, approved September 7, 1957).

Construction, National Park Service

Request to remain available until expended from July 1, 1958	$1,200,000
Appropriation to date	20,000,000
Obligations	None
Expenditures	None
Employment:	
Average number, current appropriation	710
Number involved, this estimate	None
Actual employment	None
Budget estimate next fiscal year	None

PURPOSE AND NEED FOR SUPPLEMENTAL FUNDS

The District of Columbia Stadium Act of 1957 (Public Law 300), approved September 7, 1957, authorized and directed the Secretary of the Interior to acquire lands in the District of Columbia on which a stadium is to be erected. Acquisition of the necessary lands as soon as possible will obviate paying higher prices at a later date.

JUSTIFICATION

Acquisition of lands and water rights, $1,200,000

Section 3 of Public Law 85–300, approved September 7, 1957, to authorize the construction, maintenance, and operation by the Armory Board of the District of Columbia of a stadium in the District of Columbia, and for other purposes, provides as follows:

"The Secretary of the Interior is authorized and directed to acquire by gift, purchase, condemnation, or otherwise, all real property within the boundaries of the East Capitol Street site, as established in the first paragraph under the heading '(2) East Capitol Street Site' contained in the National Capital Planning Commission report entitled 'Preliminary Report on Sites for National Memorial Stadium' dated November 8, 1956, and thereafter, upon the request of the Board, the Secretary of the Interior shall transfer to the Board, all right, title, and interest of the United States in and to all real property within the boundaries of such East Capitol Street site."

H. R. 12162 (85th Cong.) proposes to amend certain provisions of Public Law 85–300 by providing that the stadium be built on the Government land specified in the act under a concession contract arrangement. Under this arrangement the land will remain in Government ownership instead of ultimately being transferred to the Armory Board as provided for in the existing act. There is strong likelihood that H. R. 12162 will be enacted during the present session. The proposed amendment does not change the authorization and directive set forth in section 3 that the Secretary acquire the additional acreage necessary for the project. Therefore, the land must be acquired in any event.

In view of the foregoing, steps should be taken at the earliest possible date to provide funds for acquisition of the lands in the site not already in Government ownership. The sum of $1,200,000 will be required for the purpose.

Mr. KIRWAN. You may proceed.

Mr. WIRTH. I have a statement. I can read it or, if you wish, I will file it.

Mr. KIRWAN. You may insert it in the record.

(The statement of Mr. Wirth follows:)

Mr. Chairman and members of the committee, I am pleased to meet with you again to discuss our fund requirements for the 1959 fiscal year. The supplemental estimates under consideration cover financial needs that were not contemplated when our regular 1959 estimates were formulated.

The estimates before you total $11,288,000. Of the total amount, $1,288,000 is required to meet needs brought about by new legislation or regulations promulgated pursuant to law subsequent to the formulation of our regular estimates. The remaining $10 million is required to liquidate the additional obligations being incurred in 1958 for roads and trails and parkways construction through the advance of 1959 fiscal year contract authorization to 1958 and to liquidate the additional obligations to be incurred through 1959 due to cancellation of the provision in our regular budget to rescind a substantial amount of our contract authorization.

Public Law 85–157 authorized reimbursement to the District of Columbia from Federal funds for benefit payments made by the District to, or for, Park Police on the Federal payroll and to, or for, their beneficiaries under provisions of the Policemen and Firemen's Retirement and Disability Act to the extent that such benefit payments exceed deductions from the salaries of Park Police for credit to the District of Columbia. The legislation is effective retroactive to October 1, 1956. Payments by the District of Columbia for the 1957 and 1958 fiscal years are estimated to be $45,000 in excess of the payroll deductions from Park Police salaries for those 2 years. Bills for those 2 years received to date total $33,965 with the balance to be billed for medical costs as soon as it can be computed. Based on the actual accrued indebtedness to the District during that period, total fund requirements for the purpose for the 1957, 1958, and 1959 fiscal years are estimated at $77,000, the amount requested for the purpose under management and protection.

Additional costs incident to increases in salary rates of architects and landscape architects financed under the "Management and protection" appropriation in 1959, authorized by Public Law 763, 83d Congress, will total $11,000. Absorption of these additional costs in 1959, while the amount is not large, would have an adverse effect on our nationwide recreation resources planning and our national park system planning programs. These are important Mission 66 projects.

The sum of $1,200,000 included in the estimate for acquisition of lands is needed to meet two requirements of Public Law 85–300, approved September 7, 1957, which authorizes the construction of a stadium in the District of Columbia. The Secretary of the Interior is authorized and directed by that legislation to acquire additional lands adjacent to parcels already in Government ownership to provide sufficient acreage for the stadium and related facilities. This requirement of law cannot be fulfilled until the additional funds requested in this estimate under the construction item are provided.

Our regular estimate for construction (liquidation of contract authorization) of $22 million was based on our carrying out roads and trails and parkways construction programs totaling $32 million in 1958 and $25,333,000 in 1959; the sum of $6,667,000 of our 1959 contract authorization having been proposed for rescission. Through the advance of 1959 contract authorization to 1958 and cancellation of the provision for rescission of contract authorization, the Service's roads and trails and parkways programs for 1958 now total $46,765,500. For 1959, they total $17,234,500. This increase in obligational authority for the 2 years brings with it the need for additional cash to meet contractors' earnings and other costs incident to the accelerated programs. To meet this additional cash requirement, the amount of $22 million appropriated for 1959 should be increased by $10 million.

We trust that you will be able to give these requests favorable consideration.

PUBLIC LAW 85–300 PROVISIONS FOR FINANCING LAND AND STADIUM

Mr. KIRWAN. Please explain provisions of Public Law 85–300 for financing cost of land and stadium.

Mr. WIRTH. The present law provides that the Secretary of the Interior shall acquire this land; that the limit of the cost of the stadium shall be $6 million; that bonds are to be floated to build it; and that the Government is to be paid for its land. May I explain, sir, the law now before the subcommittee?

Mr. KIRWAN. I just wanted that one explained. Then it was the clear intent of Congress that the Federal Government would be paid for the land.

Mr. WIRTH. That is right.

EFFECT OF PENDING LEGISLATION ON PAYMENT FOR LAND

Mr. KIRWAN. Now, please explain if you have another one.

Mr. WIRTH. There is a bill now before Congress which amends this particular bill. It still provides for acquisition of the land but the limitation on construction cost is removed. The question of selling the land to the Armory Board is also removed and the Secretary of the Interior is authorized to enter into a concession contract similar to the ones we have with concessioners in the national parks. The Government will guarantee the bonds. When the bonds have been paid off, the stadium and everything reverts to the Federal Government. In other words, the Government would then own the stadium and everything.

The idea is this: That this stadium will be used for certain days during the year for football and baseball and other paying events. An agreement is to be entered into with the Armory Board, which will manage it, that the people for special public events and the school children, et cetera, can use the stadium when it is not being used for revenue-producing events in order to retire the bonds. Consequently, at the hearings, at which I appeared yesterday before the Joint Subcommittee on the District of Columbia of the House and Senate, I reported, after obtaining clearance to do so from the Bureau of the Budget, that this bill, as amended, would be satisfactory to the Department of the Interior.

In other words, the use of the stadium for the people and the fact that full title to it comes to the Federal Government after the bonds have been paid off, led us to believe that a concession, and not the transfer of park land to this kind of operation, would be far better than trying to sell the land to it and then get it back later.

RETIREMENT OF BONDS

Mr. KIRWAN. What makes you think you will be able to clear off the bonds?

Mr. WIRTH. That has been thoroughly investigated by bonding houses. I have no responsibility, of course, in connection with that, but it has been reviewed by the Treasury Department and other officials and they figure the bonds can be paid off at 3½ percent or less.

Mr. KIRWAN. You expect to pay that off on the proceeds from baseball or football? Teams are moving out of several towns because they cannot support them.

Mr. WIRTH. They are spreading out more.

Mr. KIRWAN. Certainly they are spreading out. They are trying to get out of many cities where they have been for years.

Mr. WIRTH. Milwaukee has been successful.

Mr. KIRWAN. So was New York very successful at one time. Brooklyn was successful. They are out now.

Mr. WIRTH. There is still one team in each of those cities.

Mr. KIRWAN. You have one team here now and they apparently are making very little.

Mr. WIRTH. May I make this remark about the present team, the Senators, because the same remark appeared in the hearings yesterday? The question of one Congressman was how the Senators' team could pay off at the present rate. The reply from Congressman Har-

ris was that the estimate of paying off the bonds would figure the present Senators team at the rate they are going and they did not figure they could get more.

Mr. KIRWAN. Let us get into this on a sound basis.

Mr. WIRTH. These two pieces of land we have reference to have been on the plans of the National Capital Planning Commission for acquisition for this kind of purpose since 1928. So, whether the stadium is built or not, the land should be acquired because it is part of the planned park system of the District of Columbia.

May I express a personal opinion? I think a stadium, whether or not it is used for professional football or baseball, here in the Nation's Capital for school and public events of various kinds that require that kind of a facility, is long past due. I think it will add greatly to the enjoyment of the schoolchildren and people of Washington and will give them an opportunity for large gatherings at important athletic events.

PURPOSE OF STADIUM AUTHORIZATION BILL

Mr. KIRWAN. I do not doubt it. If you put it in Youngstown, Ohio, it would be wonderful for everybody connected with it. There is not one American city that would not appreciate the same benefits they would receive in Washington. They are all Americans.

Public Law 85–300 is simply an authorization bill. This statement was made on the Senate floor when it passed:

> The primary purpose of the bill is to permit the Armory Board to apply to the Housing and Home Finance Agency for an advance of $35,000 to cover preliminary planning and survey of the proposed stadium so as to determine the feasibility of a building, a stadium, at the site selected by the National Memorial Stadium Commission.

Has this been complied with?

Mr. WIRTH. Yes, sir, it has been; $35,000 has been advanced. Here is a copy of the stadium report which has been completed; it is a summary of the full report. It has been submitted to Congress and that is what they are holding the hearing on before the joint committee. In my opinion, the reception yesterday was quite favorable.

HOUSE FLOOR AMENDMENT ON LAND COST

Mr. KIRWAN. Here is what Mr. McGross said on the House floor before passage of his amendment:

> My amendment provides for payment for the land presently owned or which may be acquired by the Government as a site for this stadium.
>
> Mr. MCMILLAN. Mr. Speaker, the committee agrees to the gentleman's amendment.

Mr. WIRTH. That is last year's bill.

Mr. KIRWAN. That is what we are operating under.

Mr. WIRTH. May I say this, Mr. Chairman? I am talking about the bill Congress is now considering. If this bill is not amended, the land would be acquired and become part of the park system.

Mr. KIRWAN. Are they ready to pay for the land?

Mr. WIRTH. They would have to, if they operated under existing law.

Mr. KIRWAN. Are they ready to do that?

Mr. WIRTH. I doubt very much that they are.

Mr. KIRWAN. That is the point we have to know before we appropriate the money. Are they ready to pay for this land as the present law requires?

Mr. WIRTH. They have the report and they are making the other reports to Congress.

Mr. KIRWAN. I do not want to be on the House floor and have somebody ask, is the stadium board ready to pay for this land.

Mr. WIRTH. This is planned to be added to the District park system.

Mr. KIRWAN. Will this land have to be bought or might it be donated to the Government?

Mr. WIRTH. It will have to be bought. We have not tried to negotiate for it and our estimate is based on the type of purchasing which has been done by the Planning Commission through the years.

Mr. KIRWAN. What would the stadium group pay the Government for the use of this?

Mr. WIRTH. They would pay more than this $1,200,000 because this is only a key 4-acre tract and under this bill they would have to take the parking area and everything else and we would have to appraise some 150 acres.

Mr. KIRWAN. What would the stadium group pay the Government for the lease of the land if it was handled under your arrangement?

Mr. WIRTH. That figure has not been settled.

Mr. KIRWAN. Frequently we lease land for only nominal amounts, $1 for this or $2 for that.

Mr. WIRTH. It has to be enough to retire the bonds.

Mr. KIRWAN. That is the theory in all these proposals, but suppose the revenue is not sufficient. Suppose they do not get the attendance they estimate and then they say, we cannot survive.

Mr. WIRTH. Mr. Chairman, may I say this? I wish I had the District Committee's material that it has worked up on it. I have not worked on that part of the stadium proposal.

Mr. KIRWAN. That is the part I am interested in and the committee is interested in and the Congress should be interested in before we appropriate this money?

Mr. WIRTH. The Congress is holding hearings.

Mr. KIRWAN. I know they are, but I want to get it home if they read my statement. In the Second World War when our backs were to the wall the railroads had 18 million acres of mineral land. The contract provided when they got that land that if we ever got in an emergency they would haul freight for 50 cents on the dollar. Then when we got in the first emergency that law was repealed, and they never gave one of the 18 million acres back to the United States Government.

Suppose it is a nice sunny day at the stadium and nobody is there? Where will they get the money to retire those bonds?

Mr. WIRTH. My understanding from the report that was submitted to the committee by the Treasury Department, by the special committee, by the Armory Board—I should not say submitted by the Treasury but reviewed by them—from what I heard yesterday, I feel it is a sound plan.

Mr. KIRWAN. Why don't they go to the banks and get private financing?

Mr. WIRTH. They would sell the bonds to the banks.

Mr. KIRWAN. Why shouldn't the Stadium Board buy the land directly?

Mr. WIRTH. It would be like a concession in a national park where the Government would have full control over the land and a concession is let to a private organization that invests private capital on Government land and, when the bonds are paid off, the complete responsibility of the stadium would be the responsibility of the Federal Government.

Mr. KIRWAN. Take Yellowstone Park or any other national park; it is appropriate to have a concession in there. But this is a different situation. This stadium is not the soundest investment in the world, after what we see in baseball and other sports today. Take any school, practically the only sport that supports itself is football.

Mr. WIRTH. The Redskins have indicated they would sign up.

Mr. KIRWAN. They may get the crowds, but they are only playing 5 or 6 games a year. You have to have something stronger than that.

Mr. WIRTH. May I emphasize the appeal for these funds, Mr. Chairman, on the basis that these two pieces of land would be a part of the national park system and that they have been on the plans for years whether the stadium is on them or not?

EXACT LOCATION OF STADIUM UNDETERMINED

Mr. KIRWAN. Has the exact location of the stadium in the East Capitol area been determined and approved by all the authorities?

Mr. WIRTH. The area has been approved. The exact spot in the area has yet to be determined. Whether the stadium would go on those two blocks of land or some other location would make little difference because, if it goes to another location, this area would have to be used for parking and, if it goes on this location, the other area would have to be used for parking.

Mr. KIRWAN. I do not know why you did not have that cleared up before you came here.

Mr. WIRTH. The present bill——

Mr. KIRWAN. Why did you not wait until the present bill cleared?

Mr. WIRTH. We are working under the direction of Congress and the law to acquire the land.

Mr. KIRWAN. Did not the same law say the Board should pay for the land?

Mr. WIRTH. They may still do it.

Mr. KIRWAN. They may still do it. That is the point we must be sure of.

Mr. WIRTH. The land is to be acquired in either case.

Mr. KIRWAN. You mean in the pending bill the Board is still going to pay for it?

Mr. WIRTH. No. The land is to be acquired by the Secretary of the Interior either under the revised bill they are considering or under the one on the books at the present time.

Mr. KIRWAN. Then what emergency is in this? Can you tell me that?

Mr. WIRTH. I can give you my own version of the emergency, Congressman. I do not know whether it is satisfactory or not.

Mr. KIRWAN. All right.

Mr. WIRTH. It looks like at long last there is a good possibility of getting a stadium. Usually, when you get a thing going and there is interest in it, it is the proper time to go ahead and get it done while you have that interest. Without the land, it would be very difficult.

Mr. KIRWAN. Sure, without this particular land it might be more difficult.

Mr. WIRTH. You might kill the project by delay.

Mr. KIRWAN. You are not going to kill the project now by delay.

A group of women were in here yesterday and I tip my hat to them. They represented a group of vanishing Americans. It was the only group that appeared before this committee yesterday—and we sat until 6 o'clock—that opposed something. As I recall, it was one of the few groups, if any, that have appeared before this committee in opposition to a proposal during my 15 years of service. The other groups that had appeared before us yesterday had said if we did not do this or that the economy would collapse; others said what they wanted done would help the depression; and this group of women came in and opposed something.

They opposed the George Washington Parkway in Prince Georges County. When that parkway was approved in 1931 conditions were entirely different. Now they have adequate roads in the area. But, now we have a request to buy land for that parkway. They say, "Here is something we overlooked in 1931. We had better get it going."

Mr. WIRTH. I cannot say the world will stop or it will take us out of the recession or anything like that to buy this land. You asked my opinion.

AMOUNT OF LAND INVOLVED

Mr. KIRWAN. $1,200,000 is requested to purchase about 2½ acres. Is that correct?

Mr. WIRTH. I think it comes to 3 acres.

Mr. KIRWAN. We will say 3 or 3½. What land is down there that would cost $1,200,000?

Mr. WIRTH. That is the best appraisal we can get.

Mr. KIRWAN. If that is the best you can get why not go to the finest spot in the United States that the Government owns, the Soldiers' Home?

Mr. WIRTH. That has been decided by higher authority than my own.

Mr. KIRWAN. It is the American taxpayer that will pay for it and that is a much higher authority, much beyond you or I or anybody else. You have one of the finest locations in the world at the Soldiers' Home. It will not cost us a dime. We can settle a lot of problems there.

Mr. WIRTH. I think there is a difference of opinion there.

Mr. KIRWAN. What do you mean?

Mr. WIRTH. They have had committees working on this for a long time and it was a congressional committee that finally decided on this location after hearings.

STADIUM LOCATION

Mr. FENTON. Is the location specified in the act?

Mr. WIRTH. It is being submitted by Congressman Harris.

Mr. FENTON. Is the location provided in the act?

Mr. WIRTH. Yes, it is pinpointed in the act.

Mr. KIRWAN. What location?

Mr. FENTON. The East Capitol area.

Mr. KIRWAN. If it is in the act I think they should know that we have one of the finest spots in the United States and we do not seem to want to take it. Instead we want to pay $1,200,000 for 3 acres.

Mr. FENTON. When that bill comes before the House it can be amended.

Mr. WIRTH. Here is the National Capital Planning Commission map, sir. It was drawn up in 1956, but there have been various sketches of this proposal ever since I was with that Commission in 1928. It was planned that this area at the end of East Capitol Street should be used for a stadium for athletic events and reviews and things of that kind. This report covers a little different treatment of it. Which one will be finally approved, I do not know. They propose it in here [indicating]. The East Capitol section has been decided upon by legislation, but they have three suggestions in their report and, in either case, if it goes down here, this would be needed for parking, and if it goes up here, this would be needed for parking.

Mr. FENTON. There is nothing in the proposed act to change the location?

Mr. WIRTH. No, sir. The location that the chairman is referring to was mentioned in the hearings yesterday, but Congressman Harris, who is handling the bill, was very emphatic that it should stay in this place. He said, "It has been decided. Let us not open that issue again."

Mr. KIRWAN. That is one man's opinion. I do not think it is essential to buy this land now. I think we should take a look around and see what land we own in Washington.

Why continue to buy land when we have all the land we need already owned by the Federal Government? It is easy to get to, there are good highways, and yet we have to go to another point and pay $1,200,000 for this land. I think we should wait a while and let the Nation know about it, not just the city of Washington.

Mr. WIRTH. May I make one statement, Mr. Chairman, and then I think that will be all.

Mr. KIRWAN. Yes, go ahead.

Mr. WIRTH. You asked about the emergency. I think I ought to make the record clear that this bill was passed by Congress on September 7, 1957. We were not called into the hearings. We knew what was going on by reading the papers, but we were not asked for a report on the bill.

When they started working to get the revisions, and so forth, I did not think we were involved in it until they started coming to us to see what we were doing about the land. We found out that the act provided that—

> The Secretary of the Interior is authorized and directed to acquire by gift, purchase, condemnation, or otherwise, all real property within the boundaries of the East Capitol Street site—

and so forth.

So it was an oversight on our part, not knowing this was in the law. That is why it did not appear in our regular budget submission. So I am submitting it here, first, because of the oversight in not submitting it in our regular appropriation request and, second, I feel very strongly it ought to be acquired.

Mr. KIRWAN. I do not think it would do any harm if it went over until next year. This law says:

The Board is hereby authorized to provide for the payment of the cost of such stadium, including the land upon which said stadium is located, by an issue or issues of negotiable bonds of the Board.

Now it is being changed?

Mr. WIRTH. That is my understanding.

Mr. KIRWAN. I think we should let this thing lay a while.

Mr. MAGNUSON. Mr. Chairman, may I ask a question?

Mr. KIRWAN. Sure.

TWO HUNDRED FIFTY ACRES PRESENTLY OWNED AT LOCATION

Mr. MAGNUSON. Do we not own quite a bit of land in this area?

Mr. WIRTH. Yes, we own all but these two blocks.

Mr. MAGNUSON. What do we own, how many acres?

Mr. WIRTH. We own about 180 acres in here, and between Benning Road and the armory there may be 70 or 80 acres, so that would be about 250 acres all told.

Mr. MAGNUSON. I am confused. You said the area involved was 180 acres. I thought this was for 2 acres?

Mr. WIRTH. That is right, but the rest is already owned by the Federal Government. This is the Planning Commission map of 1956 showing the area before this stadium idea came up. The Government owns everything in here with the exception of this piece of property in there [indicating]. The 180 acres we are talking about is this 180 acres in here. I would guess there may be another 70 or 80 acres, so there are about 250 acres, and the idea was with the armory here and East Capitol here and the stadium here. One plan of the engineers called for the stadium to be down here. There might be a difference of opinion where it will go but, in either case, with 50,000 people you would have to provide more parking space. If they put the stadium here, they propose to use this for a parking area. So the two blocks would be desirable in either case.

PURCHASE OF ADDITIONAL LAND NOT ESSENTIAL TO STADIUM

Mr. MAGNUSON. We could not pay $400,000 an acre for parking space, could we?

Mr. WIRTH. That is about what you will have to pay in the city limits now.

Mr. KIRWAN. Can we not build it without purchasing land?

Mr. WIRTH. I do not say it is not possible. Certainly it is possible to work out something. But it would be a better arrangement, we think, if this piece is gotten out of here. There are some values in here I do not know how to measure, that you cannot measure in dollars and cents, but it is important to round this out.

Mr. MAGNUSON. If you have almost 300 acres, it seems you could take care of parking.

Mr. WIRTH. We want to get parking in this area to take care of both the armory and stadium. This parking area is too far away.

Mr. KIRWAN. How many blocks is it away?

Mr. WIRTH. Well, using that same distance, it would be about 3 blocks, but you would be walking uphill.

Mr. MAGNUSON. It is downhill going back.

Mr. KIRWAN. That is right, they are going downhill going back.

Mr. WIRTH. Most of this land is "made" land that has been "made" over the years through dredging by the Corps of Engineers. They feel they cannot build it down here. Part of this is filled land also, but soundings have been made at both locations and it may be more expensive one place than another, but not much.

REQUIREMENTS OF THE PRESENT LAW

Mr. MAGNUSON. The present law directs that the stadium be in that area?

Mr. WIRTH. Yes.

Mr. MAGNUSON. But does it require you to acquire that 3-acre corner?

Mr. WIRTH. The law says:

> The Secretary of the Interior is authorized and directed to acquire by gift, purchase, condemnation, or otherwise, all real property within the boundaries of the East Capitol Street site, as established in the first paragraph under the heading "(2) East Capitol Street Site" contained in the National Capital Planning Commission report entitled "Preliminary Report on Sites for National Memorial Stadium" dated November 8, 1956.

And this is the map they referred to in that report.

Mr. MAGNUSON. Therefore, by existing law, you are specifically directed to acquire these 3 acres?

Mr. WIRTH. Whether I were personally interested in this or not, I would be required to come before this committee and request funds to buy these 3 acres. It happens that I also favor it.

Mr. MAGNUSON. And also under existing law those who use it are required to pay for it?

Mr. WIRTH. That is right.

Mr. FENTON. Is it 3 acres?

Mr. WIRTH. 2½ or 3, somewhere in that neighborhood. It is 2 blocks.

Mr. MAGNUSON. What is on it?

Mr. WIRTH. Buildings and houses.

Mr. FENTON. There are about 300 acres owned by the Government down there?

Mr. WIRTH. All together. You have to remember also that the East Capitol Bridge goes across there and the traffic comes around there, which is a kind of barrier, although there is a tunnel so you can go under this road. This is the Baltimore-Washington Parkway coming in here and it ties in with East Capitol Street. So you have a network of traffic coming here that uses up a lot of the area. This part of the parkway is due to be built shortly.

Mr. KIRWAN. If purchased by the Federal Government, why should not the property be purchased under the Capper-Crampton Act, which provides for 100 percent reimbursement by the District of Columbia?

Mr. WIRTH. That is what baffled me when the Secretary was directed to acquire the land. I was not looking for work, but the law says I am to do it and I am trying to do it; I am doing the best I can; maybe not successfully.

Mr. KIRWAN. We are doing the best we can and trying to show the taxpayers of America that the Government owns plenty of land in the District of Columbia without using $1,200,000 to purchase some more. If the people had a chance to pass on that, I guarantee you they would not purchase it.

Mr. WIRTH. I will not argue that point with you, sir.

Mr. KIRWAN. They are voting down bond issues that mean something to their city.

Mr. WIRTH. If we are granted this $1,200,000, I intend to go to the Planning Commission and have their established purchasing staff buy the land because we have no such staff. I would use their organization to do it.

Mr. FENTON. What is on those 2½ acres now?

Mr. WIRTH. It is all built up with buildings of various kinds. I am not thoroughly familiar with how they are occupied at the present time. They have been occupied in several different ways during the war and afterwards.

Mr. FENTON. Where are those people going to go?

Mr. WIRTH. They will have to find other locations.

Mr. FENTON. How many people are involved?

Mr. WIRTH. I do not know, sir.

Mr. FENTON. I think that is very important. How many people are going to be displaced.

Mr. WIRTH. I can find that out. As I stated earlier, Doctor, in asking for this fund we have used a very preliminary estimate which the land purchasing men of the National Capital Planning Commission indicated would be what it would cost. When they get the appraisal it may be less, but it is based on 2½ times the assessed value, which is about what land in Washington is bringing today.

Mr. FENTON. How old are the buildings on the land?

Mr. WIRTH. They are quite old. I am sorry, but I do not have the basic information on that. It is not what you would call a high-class neighborhood, but it is certainly not a slum area.

Mr. FENTON. I would like to know how many people are involved. You state on the first page here that it is necessary to get the land as soon as possible to obviate paying higher prices.

Mr. WIRTH. That is right. I have nothing more to add. I only hope the committee will approve it.

Mr. KIRWAN. All right.

Construction—Parkways, Roads, and Trails

Liquidation of Contract Authorization

Construction (Liquidation of Contract Authorization)

Status of unfunded contract authorization

	Presently available	Revised estimate	Difference
Unfunded balance at beginning of year	$41,052,500	$41,052,500	
Unfunded balance at end of year	−19,052,500	−9,052,500	+$10,000,000
Appropriation to liquidate contract authorization	22,000,000	32,000,000	+10,000,000

Mr. Kirwan. We will now go to the request for $10 million for liquidation of contract authorization.

Do you have a statement on that?

Mr. Wirth. I have no special prepared statement on it. You will recall, when we appeared before the committee earlier, in our regular appropriation estimates we submitted a request on the basis of the cutting down on our contractual authorization, which this committee did not go along with and neither did the Senate committee. The bill gets us back to our regular contractual authorization of $32 million contained in the Federal-Aid Highway Act. This $10 million is now needed to handle the liquidation of the contractual authorization.

CONTRACT AUTHORITY ADVANCED FROM 1959

I might point out further in this connection that we have, with the approval of this committee—with the knowledge of this committee, at least—moved forward approximately $15 million of 1959 contractual authorization in order to help with available work in the recession. I am pleased to say the prospects are that all but $2 to $3 million of that will actually be under contract before the end of this fiscal year. That puts an additional burden on us. It does two things; first, it cuts down the amount of work to be done in 1959 from $32 million worth of contractual authorization to $17 million worth of contractual authorization, which would mean a drop in our personnel, and in order to alleviate that and not disturb the organization too much, we are considering the advancement, with the authority we have under the contractual authorization, of about one-half of that $15 million, or about $7.5 million, from 1960, so our 1959 and 1960 contractual authorization will be on an even level rather than have valleys and hills in it.

Also, as you already know, when we get started at the beginning of a fiscal year in July, it will take some time to get those projects ready for bids, which means, in a lot of cases, those jobs do not get under contract until late fall or early spring. Consequently, in this case, where the 1959 projects are now under contract to the tune of $15 million, probably all the cash for that $15 million will be required in 1959, because they will have the whole summer construction period and next spring to finish up. Therefore, most of that $15 million is needed in cash.

One-half of the money we are moving forward from 1960 to this year; therefore, we are back now to ask for the $10 million which we most likely would have asked for if an attempt had not been made to reduce our contractual authorization for 1959. So we are back on an even keel.

JUSTIFICATION MATERIAL

Mr. KIRWAN. We will insert the item on page 20 of House Document 394 and the justifications in the record.

(The material referred to follows:)

"CONSTRUCTION (LIQUIDATION OF CONTRACT AUTHORIZATION)

"For an additional amount for 'Construction (liquidation of contract authorization)', $10,000,000, to remain available until expended."

Obligations against contract authorizations provided by the Federal-Aid Highway Act of 1956 for parkways and park roads and trails have been accelerated. This proposed supplemental appropriation is necessary to provide additional cash to pay these obligations as they become due in fiscal year 1959.

Construction (liquidation of contract authorization), National Park Service

Request, to remain available until expended, from July 1, 1958	$10,000,000
Appropriation to date	22,000,000
Obligations	None
Expenditures	None
Employment:	
Average number, current appropriation	655
Number involved, this estimate	None
Actual employment	None
Budget estimate next fiscal year	None

PURPOSE AND NEED FOR SUPPLEMENTAL FUNDS

As a result of the release of budget reserve in 1958 in the amount of $2,022,000; the advance of projects amounting to $14.765,500 to 1958 from the 1959 program, and the action of the Congress on the 1959 appropriation bill with respect to the proposed rescission of $6,667,000 of 1959 contract authorization, additional cash will be required in 1959 to liquidate the additional obligations incurred during the 1958 fiscal year and to make progress payments against the additional contract authority for 1959 which was not scheduled for obligation in the regular budget submission.

JUSTIFICATION

The need for additional cash during the 1959 fiscal year has been created as a result of the release of budget reserve in 1958 in the amount of $2,022,000, the advance to 1958 from the 1959 program projects amounting to almost $15 million, and the action of the Congress on the 1959 appropriation bill with respect to the proposed rescission of $6,667,000 of 1959 contract authorization.

The accelerated rate of obligation during the 1958 fiscal year will bring about cash requirements in 1959 which otherwise would not occur until 1960.

Expenditures covering prior year obligations and for partial payments against going projects through March 31, 1958, are about equal to the obligations incurred during that period. Obligations during 1958 are now estimated to be in excess of $50 million. In addition, prior year unliquidated obligations brought forward to 1958 total about $20 million. This represents a potential outlay of cash to liquidate 1958 and 1959 obligations of around $87 million, whereas the amount now available and included in the 1959 appropriation totals around $68 million. With the acceleration of obligations and expenditures because of the stepped-up program, an additional $10 million will be needed in 1959 to permit an orderly liquidation of obligations now contemplated.

A breakdown of the additional cash requirements on an activity basis is as follows:

	Presently available	Revised estimate	Increase requested
1. Parkways	$9,782,000	$16,000,000	$6,218,000
2. Roads and trails	12,218,000	16,000,000	3,782,000
Total	22,000,000	32,000,000	10,000,000

QUESTION OF ADVANCE OF 1960 AUTHORIZATION TO 1959

Mr. KIRWAN. You explained about the possible advance of a portion of the 1960 contract authorization to 1959. Have we ever advanced the authorization before?

Mr. WIRTH. No; we have never moved forward before to my knowledge, Mr. Chairman. The only reason we moved forward from 1959 to 1958, we did it under the basic authority contained in the Federal-Aid Highway Act which authorizes the authorization to be available a year before the year authorized and to extend 2 or 3 years beyond the year for which it is authorized. We did move it forward this year with full approval in order to help take care of the recession.

Mr. KIRWAN. There was a special order that came out?

Mr. WIRTH. That is right. We do not have approval to move the 1960 projects yet, but we propose to seek it. We have had a big year, and we have a steady organization which has worked hard and overtime to get these projects underway. Then, if we take a dip and our program is cut from $32 million to $17 million, that means we have a big drop in work for our construction staff and it means our overhead would be more than it should be. Then in 1960 we go back to $32 million. We would like to even that up by taking one-half of that $15 million and moving it forward to 1959, which will leave about $25 million in 1959 and $25 million in 1960. This would enable us to keep a stable organization.

REDUCTION IN CONSTRUCTION COSTS

Mr. KIRWAN. You have to keep in mind that in testimony before us yesterday we were told that it is 15 percent cheaper to build roads now than it was a year ago, and it may be 20 or 25 percent cheaper if we do not rush to tie ourselves up in contracts.

Mr. WIRTH. I heard that that statement was made here, sir, and we made a check of our own contractual experience. It is true that some of the construction is costing less than the engineers' estimates, but it is not falling below the money we requested, and I will tell you the reason why. We bring in what we think is a fair estimate of what a project costs a year and a half or 2 years before the project starts, but we do not prepare the detailed plans until such time as the program is approved. By that time, there has been an increase over the last year and a half in the index of labor and material costs, and so the engineers' estimate for that job is higher than the one we had submitted. It is the engineers' estimate, however, and the bid is proper and we

have to accept it or leave it. We sometimes get a bid below the estimate and sometimes above, but I would say the prices are about the same as when we submitted the project a year and a half ago.

Mr. KIRWAN. Give them another year and I believe bids will be down there because they will want to keep in business.

Mr. WIRTH. I would be willing to take your guess on that, but the Department of Labor reported the cost of living going up in May.

Mr. KIRWAN. The cost of living has gone up despite the recession. That is one thing you cannot get away from, eating; but you can get away from building a highway. And those costs appear to be going down.

Mr. WIRTH. Food is going up.

Mr. KIRWAN. Food has been going up for years but the cost of construction is going down and I would not be too eager to rush this 1960 money into 1959.

Mr. WIRTH. Even without the 1960 contract authority we have, we need all cash to cover the $15 million advanced to 1958 instead of half cash.

CASH PRESENTLY AVAILABLE

Mr. KIRWAN. You have a cash balance of $22,427,000 as of May 31, 1958, and another $22 million is available in the 1959 act. Why will not this $44,427,000, which is about double 1957 expenditures, be sufficient to carry your cash requirements until the first of the year when we can again review actual progress under the contracts?

Mr. WIRTH. I had prepared this statement here which I got just before I came here. I anticipated that question would come up.

The estimated unliquidated obligations, unpaid contracts, and so forth, as of June 30, 1958, to be paid off in 1959, total $37,500,000. The estimated obligations to be incurred in 1959 from 1958 carryover balance, $2 million; and from 1959 contract authorization, $17 million; or a total for those two of $19 million, or a subtotal of $56,500,000. Less estimated unliquidated obligations, unpaid contracts, and so forth, as of June 30, 1959, to be paid off in 1960, $9 million. Estimated cash requirements, 1959, $47,500,000.

Estimated cash availability, 1959: $15,500,000, estimated carryover balance from 1958; 1959 appropriation, $22 million; 1959 supplemental estimate, $10 million; or a total of $47,500,000.

I would like to insert this table in the record at this point.

Mr. KIRWAN. It will be inserted at this point.

(The table follows:)

Cash requirements for liquidation of contract authorization, 1959 fiscal year

Estimated unliquidated obligations (unpaid contracts, etc.) as of June 30, 1958, to be paid off in 1959	$37,500,000
Estimated obligations to be incurred in 1959:	
From 1958 carryover balance	2,000,000
From 1959 contract authorization	17,000,000
	19,000,000
Subtotal	56,500,000
Less estimated unliquidated obligations (unpaid contracts, etc.): as of June 30, 1959, to be paid off in 1960	9,000,000
Estimated cash requirements, 1959	47,500,000
Estimated cash availability, 1959:	
Estimated carryover balance from 1958	15,500,000
1959 appropriation	22,000,000
1959 supplemental estimate	10,000,000
Total	47,500,000

Mr. KIRWAN. According to the figures here, you have an estimated carryover balance in 1959 of $15,500,000, plus the 1959 appropriation of $22 million. Do you not think that would run you until the first of the calendar year? Then you could come up here with a supplemental for what was necessary for the balance of the year.

Mr. WIRTH. I would not say that it would not. This is our best estimate at this time and I cannot say we would need it before the end of the calendar year.

Mr. FENTON. Is Mission 66 involved in this to?

Mr. WIRTH. This $10 million is contractual authorization, and the question is, do we need this additional cash to carry on Mission 66? We think we do. But the Congressman and the chairman are asking whether we have enough cash to last us until January 1 and to wait until then to see if we need more cash in order to carry on our regular program. That is the question.

Mr. FENTON. That is including Mission 66?

Mr. WIRTH. Yes.

Mr. FENTON. How much is authorized for Mission 66?

Mr. WIRTH. $32 million a year for roads and trails and parkways. We are talking about contractual authorization. The $10 million does not affect that contractual authorization. It merely makes the cash available to pay the contracts.

Mr. FENTON. Can you really utilize all that money?

Mr. WIRTH. Yes. We have only $17 million from 1959 contract authorizations that we can obligate because we have obligated all the rest.

Mr. FENTON. That is a lot of money.

Mr. WIRTH. But there are a lot of areas and a lot of people coming to the parks.

MANAGEMENT AND PROTECTION, NATIONAL PARK SERVICE

Program and financing

	Presently available	Revised estimate	Difference
Program by activities:			
1. Management of park and other areas	$11,450,794	$11,527,794	+$77,000
2. Forestry and fire control	874,705	874,705	
3. Soil and moisture conservation	100,000	100,000	
4. Park and recreation programs	1,917,631	1,928,631	+11,000
5. Concessions management	288,870	288,870	
Total obligations	14,632,000	14,720,000	+88,000
Financing: Appropriation	14,632,000	14,720,000	+88,000

Object classification

		Presently available	Revised estimate	Difference
	Total number of permanent positions	1,882	1,882	
	Full-time equivalent of all other positions	507	507	
	Average number of all employees	2,321	2,321	
	Number of employees at end of year	3,150	3,150	
01	Personal services:			
	Permanent positions	$9,363,503	$9,374,503	+$11,000
	Positions other than permanent	1,669,167	1,669,167	
	Other personal services	352,188	352,188	
	Total personal services	11,384,858	11,395,858	+11,000
02	Travel	383,767	383,767	
03	Transportation of things	84,650	84,650	
04	Communication services	250,336	250,336	
05	Rents and utility services	208,187	208,187	
06	Printing and reproduction	192,242	192,242	
07	Other contractual services	255,315	255,315	
	Services performed by other agencies	15,000	15,000	
08	Supplies and materials	852,750	852,750	
09	Equipment	472,120	472,120	
11	Grants, subsidies, and contributions	503,280	580,280	+77,000
13	Refunds, awards, and indemnities	3,500	3,500	
15	Taxes and assessments	25,995	25,995	
	Total obligations	14,632,000	14,720,000	+88,000

Mr. KIRWAN. We will now take up the item of management and protection, and we will insert the item on page 20 of House Document 394 and the justifications in the record at this point.

(The item and justifications follow:)

"NATIONAL PARK SERVICE

"MANAGEMENT AND PROTECTION

"For an additional amount for 'Management and protection', $88,000: *Provided, That said appropriation shall be available for reimbursements to the District of Columbia for benefit payments made for prior fiscal years pursuant to the Act of August 21, 1957 (71 Stat. 399).*"

This proposed supplemental appropriation is to cover (1) reimbursements to the District of Columbia for benefit payments to the United States Park Police pursuant to the act of August 21, 1957, and (2) increases in salaries for certain architects approved by the Civil Service Commission, effective December 29, 1957, and February 23, 1958.

Management and protection, National Park Service, 1959 fiscal year

Request for 12 months from July 1, 1958	$88,000
Appropriation to date	14,632,000
Obligations	None
Expenditures	None
Budget estimate next fiscal year	None
Employment:	
Average number, current appropriation	2,321
Number involved this estimate	None
Actual employment	None

Purpose and need for supplemental funds

The estimate of $88,000 is needed to provide $77,000 for reimbursing the District of Columbia for retirement and other benefit payments made to the United States Park Police or their beneficiaries in conformity with Public Law 85–157, approved August 21, 1957, and $11,000 to cover increased salary costs of certain professional employees as a result of step-up in salary rates pursuant to law.

These additional costs which have already accrued and are continuing to accrue daily were made effective by legislation or authorized by regulation subsequent to the submission of the annual estimates, and therefore, no funds are available to meet such costs without adverse effect on regular program functions.

Explanation of addition to appropriation text

Reimbursable payments to the District of Columbia for benefit payments made to the United States Park Police cover the 1957 and 1958 fiscal years while the funds included in the estimate are for the 1959 fiscal year. Authority is required to make payments out of the funds retroactively for 2 previous fiscal year charges.

JUSTIFICATION

The estimate of $88,000 is to provide $77,000 to reimburse the District of Columbia for retirement and other benefit payments made to the United States Park Police or their beneficiaries, and $11,000 to cover increased salary costs of certain professional employees as a result of step-up in salary rates pursuant to law.

Reimbursement to District of Columbia

Section 6 of Public Law 85–157, approved August 21, 1957, is quoted in part as follows: "There are hereby authorized to be appropriated from revenues of the United States such sums as are necessary to reimburse the District of Columbia, on a monthly basis, for benefit payments made from revenues of the District of Columbia to or for Federal employees and to or for the surviving children and spouse of such Federal employees under the provisions of the Policemen and Firemen's Retirement and Disability Act, to the extent that such benefit payments exceed the deductions from the salaries of Federal employees for credit to the revenues of the District of Columbia. * * *"

The effective date of the legislation was retroactive to October 1, 1956. Until the enactment of this legislation, the District of Columbia had been making certain benefit payments for the United States Park Police, including retirement, medical, surgical, hospital, and other related expenses. The service has already received bills from the District government for a portion of the costs applicable to the 1957 and 1958 fiscal years. Computations based on billings received to date indicate the costs will amount to $45,000 for the 1957 and 1958 fiscal years, and $32,000 for the 1959 fiscal year. Funds for meeting these costs are not now available, and the amount of $77,000 is requested to cover such costs.

Increase in professional pay costs

Pursuant to Public Law 763, 83d Congress, the Civil Service Commission has authorized an increase in salary rates of certain professional employees. Salary rates of architects and landscape architects under this appropriation have been increased on an annual basis by $11,000. These increases were made effective December 29, 1957, for architects, and February 23, 1958, for landscape architects. The costs are being absorbed during the balance of the 1958 fiscal year, but to do so in 1959 would adversely affect the program to which these employees are assigned. The additional amount is needed to cover these additional salary costs.

REIMBURSEMENT TO DISTRICT OF COLUMBIA

Mr. KIRWAN. $77,000 is for reimbursement to the District of Columbia for benefit payments to the United States Park Police. This law was passed last August. Why was not this item included in the 1959 budget request?

Mr. WIRTH. We did not know until we started getting bills from the District that it was going to cost us anything. That is the main reason. There was no way of telling until the bills started coming in.

ABSORPTION OF COSTS

Mr. KIRWAN. $45,000 of this is for costs in 1957 and 1958. This is three-tenths of 1 percent of this year's appropriation of over $14 million. Why cannot this little amount be absorbed when the committee allowed an increase of over $2,500,000 in 1958 over 1957?

Mr. WIRTH. That $2.5 million, sir, is not available to us. There is only a certain amount for the police in the District and the rest is all obligated in other places.

Mr. KIRWAN. But it is all within the total function of management and protection.

Mr. WIRTH. I know, but it has already been spent and taken care of.

Mr. KIRWAN. When were you notified to pay the $77,000? Were you notified before you obligated your funds?

Mr. WIRTH. No. We have been notified very recently. This bill was passed on August 21, 1957, and section 8 of the bill states: "The effective date of this act shall be October 1, 1956." So it is retroactive even to then, and they are just beginning to come in with the bills to us this spring.

Mr. KIRWAN. Even at that, it took them quite a while to get the bill around to you. The recent pay raise involves thousands, and they have started sending the checks out already.

Mr. WIRTH. This is not money that goes to the policemen but money to pay their medical bills.

Mr. KIRWAN. No matter what it is, it is still only $45,000 for this year. Why could you not absorb that out of the $14 million?

Mr. WIRTH. We do not have it.

Mr. KIRWAN. How much unobligated balance did you have when you got this notice?

Mr. WIRTH. Well, I cannot tell you that, sir, but it would mean that we would have to let people go in order to pick up that money, because our payrolls are carried right on through. I might say, sir, I called for the complete carryover accounts from 1956 and 1957 to see how close we were coming and it scared me when I found we were down to $2,000 or $3,000 of lapsed funds at the end of the year.

Mr. KIRWAN. In other words, you do not think that you can absorb it?

Mr. WIRTH. No, sir, I do not think that we can absorb it. In fact, I know we cannot; we do not have the money.

Mr. KIRWAN. Take this $32,000 for these benefit costs in 1959. The committee just allowed the full budget request of $14,632,000 for this item for 1959, an increase of $500,000. Again, why cannot that small increase be taken care of without coming back to this committee?

Mr. WIRTH. We have justified every single solitary item and how we are going to spend the money, and we got practically no increase at all in 1959 in these funds. I think that we had $400,000 and the reclassifications and everything ate up the whole thing because there were steps taken by the Civil Service Commission to increase the salaries of engineers and so forth, so practically all that amount is committed for other purposes.

Mr. KIRWAN. You have over $1,700,000 just for travel, supplies and equipment in 1959. Why cannot these be cut just a little to take care of these benefits?

(Discussion off the record.)

Mr. KIRWAN. How many men are involved in this?

Mr. WIRTH. 123.

Mr. KIRWAN. And you cannot absorb it?

Mr. WIRTH. No, sir. Every year there is a certain amount of lapse. You have to plan it on the safe side. We cannot overspend.

We have a certain amount of lapse in the 1957 appropriation that we cannot touch. Perhaps I am off the reservation. We have to have enough to be on the black side and not on the red side. If the small amount of money that was available at the end could be made available by legislation, because it was in 1957 and 1958, we might be able to handle it.

Mr. KIRWAN. It does seem that you could handle it, but if you cannot, that is the end of it.

MAMMOTH CAVE NATIONAL PARK

Now, some years ago the committee allowed you $50,000 toward purchase of two privately owned caves in the Mammoth Cave National Park in Kentucky.

Mr. WIRTH. Yes.

Mr. KIRWAN. What did you do with that money?

Mr. WIRTH. Well, we had an authorization of $350,000 at that time, Mr. Chairman, to buy the Onyx and Crystal Caves within Mammoth Cave National Park which were private lands to be purchased. You gave us $50,000 of that $350,000 authorization. We used about $20,000 of it for surveys and appraisals and in beginning negotiations. You told us at that time to take that and do the necessary spadework to see whether we could get it for that. We could not, and we have $30,000 in reserve. I must tell you, however, that Congressman William Natcher of Kentucky, whose district this is in, was in to see me the first part of the week with representatives from Kentucky, and the indications are that, with the aid of the State and by using the balance of the $300,000 authorized—we could begin to do business.

Mr. KIRWAN. With the $30,000 that you have left you could start to do business?

Mr. WIRTH. We would need the balance of the authorization, which is $300,000. The actual appraisals show that the costs will be around $650,000. The $330,000 would take care of the downpay-

ment and the rest would be paid out of the difference between our actual expense of operation and revenues from the park.

Mr. KIRWAN. How much land is involved?

Mr. WIRTH. The acreage amounts to around 650 acres, but the valuable part of it is the underground part, the caves which have commercial value. There is considerable confusion in the park because of these private cave operations.

Mr. KIRWAN. How far is this from the Mammoth Cave?

Mr. WIRTH. About 2 miles.

Mr. KIRWAN. And you think that this should be in the national park?

Mr. WIRTH. Yes. Those are the only two pieces of private land within the park boundary.

WEDNESDAY, JUNE 25, 1958.

NATIONAL CAPITAL PLANNING COMMISSION

LAND ACQUISITION—GEORGE WASHINGTON MEMORIAL PARKWAY—PRINCE GEORGES COUNTY

WITNESSES

WILLIAM E. FINLEY, DIRECTOR
ELLIS F. PRICE, CHIEF, PROJECTS AND DESIGN
EDWARD GROTECLOSS, JR., LAND PURCHASING OFFICE
JOHN R. PRITCHARD, ADMINISTRATIVE OFFICER
WILLIAM KAHLOR, COUNSEL, BOARD OF COUNTY COMMISSIONERS, PRINCE GEORGES COUNTY

LAND ACQUISITION, NATIONAL CAPITAL PARK, PARKWAY, AND PLAYGROUND SYSTEM

Program and financing

	Presently available	Revised estimate	Difference
Program by activities:			
1. George Washington Memorial Parkway, Va.			
2. George Washington Memorial Parkway, Md.		$2,000,000	$2,000,000
3. Extension of stream valley parkways into nearby Maryland			
4. Park, parkway, and playground system in the District of Columbia	$99,480	99,480	
Total obligations	99,480	2,099,480	2,000,000
Financing:			
Unobligated balance brought forward	−99,480	−99,480	
Unobligated balance carried forward			
Appropriation		2,000,000	2,000,000

Object classification

	Presently available	Revised estimate	Difference
Total number of permanent positions	2	2	
Average number of all employees	2	5	3
Number of employees at end of year	2	2	
01 Personal services:			
Permanent positions	$12,910	$32,910	$20,000
Other personal services	49	49	
Total personal services	12,959	32,959	20,000
02 Travel	100	1,100	1,000
04 Communication services	100	2,100	2,000
06 Printing and reproduction	500	8,000	7,500
07 Other contractual services	5,000	92,350	87,350
08 Supplies and materials	100	1,100	1,000
09 Equipment		500	500
10 Lands and structures	79,921	1,959,921	1,880,000
11 Grants, subsidies, and contributions:			
Contribution to retirement fund	800	1,450	650
Total obligations	99,480	2,099,480	2,000,000

Mr. KIRWAN. We will insert the item on page 8 of House Document No. 394 and the justifications in the record at this point.

"NATIONAL CAPITAL PLANNING COMMISSION

"LAND ACQUISITION, NATIONAL CAPITAL PARK, PARKWAY, AND PLAYGROUND SYSTEM

"For an additional amount for 'Land acquisition, National Capital park, parkway, and playground system', *for land acquisition for the George Washington Memorial Parkway,* $2,000,000 to remain available until expended: *Provided, That not to exceed $120,000 of the funds provided herein may be used for necessary expenses of the Commission (other than payments for land) in connection with such land acquisition.*"

This item was deleted from the 1958 appropriation bill pending study by the Senate Interior and Insular Affairs Committee. A favorable report on the proposed land acquisition has been made by that committee. These funds are needed to permit land acquisition for the George Washington Memorial Parkway on the Maryland side of the river.

STATEMENT REGARDING SUPPLEMENTAL APPROPRIATION REQUEST, GEORGE WASHINGTON MEMORIAL PARKWAY, PRINCE GEORGES COUNTY, MD., LAND ACQUISITION, NATIONAL CAPITAL PARK, PARKWAY, AND PLAYGROUND SYSTEM

Funds for completion of the parkway in Maryland and Virginia requested in the 1958 budget were denied by the Senate Appropriations Committee, pending review by the Interior and Insular Affairs Legislative Committee of the need and desirability of completing this project. This committee has now reported favorably upon the Maryland project which can proceed independently of the Virginia project on which there is not yet complete agreement.

The House bill for fiscal year 1958 provided $1,900,000 for Maryland which has been increased to $2 million on the basis that costs have risen materially. While most recent estimates for this purpose are approximately $2,700,000, we are limited to the $2 million submission at this time because of the Maryland debt limitation of $1 million which only their 1959 legislature can change. The $2 million consists of $1 million representing the share of the Federal Government and the remaining $1 million represents an advance to be made to Prince Georges County.

These funds, the Maryland portion of which was authorized by the Maryland Legislature more than a year ago, are for acquiring the most essential land for the section of the parkway in Prince Georges County, extending from the District line to Fort Washington. All interested official agencies, including the Prince Georges County authorities and the Maryland-National Capital Park and Planning Commission, have agreed to the project plans for the parkway.

On March 28, 1958, a meeting was held of an interagency committee, consisting of representatives of Federal, State, and county authorities in Maryland, organized to perfect plans for the parkway. At that time, the committee requested the Director of the National Capital Planning Commission to bring to the attention of the Honorable James E. Murray, chairman, Committee on Interior and Insular Affairs, United States Senate, the urgency of this situation and that the prospective construction of the Woodrow Wilson Bridge is having a very real effect on the value of land. As long as there is doubt of fulfillment of a parkway plan, even though these plans are well advanced, it is increasingly difficult to restrain owners from proceeding with subdivisions that are contrary to the plan.

Also, the Bureau of Public Roads is now in the process of acquiring the land for the Maryland approaches to the Woodrow Wilson Bridge. These approaches connect directly with the George Washington Memorial Parkway in Prince Georges County, and considerable savings would be possible if the two acquisition programs could coordinate. As matters now stand, bridge funds will pay for severance values and dredging rights on land which will later have to be acquired for the parkway.

Favorable action for proceeding with the Fort Washington Parkway will provide the opportunity to coordinate the parkway and bridge approach acquisitions thereby saving in acquisition costs and offsetting to some extent the increase in land costs that have occurred during the last year and a half.

Mr. KIRWAN. We will now take up the item of land acquisition for the George Washington Memorial Parkway.

Mr. Finley, you are the new Director, so would you mind giving the committee your background?

Mr. FINLEY. Sir, I was recently appointed director by the members of the National Capital Planning Commission. I first came into city planning in California in 1947 during training at the University of California. I was employed by various public planning agencies and private consultants in that area for several years and spent some 4 years as director of city planning for Richmond, Calif., an industrial city of some 100,000. After that I went into consulting work, and also spent some time on the faculty of the University of Pennsylvania. That is really about all.

I have all of the academic paraphernalia that goes with this kind of technical position.

I consider it a great privilege to serve here in the Capital, although I am still pretty green at the processes, and I hope that you will bear with me during the procedure.

Mr. KIRWAN. You will do very well.

Mr. FINLEY. If I may, sir, I would like to introduce the people with me, because I will have to rely on them to some large extent.

The gentleman to the right of the reporter is Mr. William Kahlor, counsel for the Prince George's County commissioners. He is here with the committee's permission, because this is a sort of partnership arrangement, and he will explain their position.

I also have with me Mr. Price, our planner.

Also, Mr. Grotecloss, our land agent, and Mr. Pritchard, who is our administrative officer who handles the budget.

Mr. KIRWAN. You may proceed with your statement.

Mr. FINLEY. I would like to explain this statement and the reasons that we are up for a supplemental.

This parkway, as you know, has been planned since before 1930. It was authorized in the Capper-Cramton Act of 1930, but over the years there has been very little pressure for it to develop because the land was pretty far out in the country. However, with the growth

of the Capital region, the land has developed fairly quickly in the last 4 or 5 years. Last year, when it was part of the regular appropriation request, it was turned down by a committee of the Senate on the grounds that it was tied in to the Fairfax County portion of the parkway. As you know, the parkway runs on both sides of the river from Great Falls all the way down the Potomac to Mount Vernon on the west and to Fort Washington on the east.

We have since had many conferences with Members of Congress and the local government; and in order to expedite this portion of the parkway, the two matters were separated, so we are now only talking about the portion of the parkway in Prince George's County.

As you know, this is a matching fund proposition, dollar for dollar, local government and National Government, on the ground that this is a benefit to the Nation's Capital on the one hand, but also it should be partially paid for by the people in the adjacent jurisdictions.

We are talking about a total of $2 million.

Mr. KIRWAN. Let me stop you there. This is a matching proposition, dollar for dollar, on the land costs?

Mr. FINLEY. Yes.

Mr. KIRWAN. But we will have to foot the bill on the other costs?

Mr. FINLEY. Yes.

Mr. KIRWAN. So it is not matching dollar for dollar.

Mr. FINLEY. It is on the land costs only; that is correct.

We are talking primarily about a total of $2 million at this time. The total cost of land acquisition for some 1,150 acres from the District of Columbia down to Fort Washington is $2,700,000. We are asking for a total of $2 million at this point, mainly because of the limitation placed by the Legislature of Maryland on the ability of Prince Georges County to obligate itself for financing its share at this time.

It is estimated by our land agent that we will be able to buy some three-quarters of the land for that amount and we will only be able to proceed when the Prince Georges County transmits to the United States Government bonds for their half at this time.

Mr. Kahlor will give evidence that the county, which has been really pressed for schools and roads and other elements caused by fast growth, cannot supply its share in cash at this time. The Capper-Crampton Act, we believe very wisely, authorized the lending of Federal funds to local jurisdictions for a period not exceeding 8 years. We have strong evidence that the county will, at the end of 8 years, be able to redeem its bonds and return the money to the United States Treasury for whatever purposes the Congress decides.

I would like to submit this map for your review. I think it is important you see it so you can understand the pressure we are under in terms of development.

This [indicating] is the District boundary. This [indicating] is the St. Elizabeths farm presently owned by the United States Government and operated by the Department of Health, Education, and Welfare. This [indicating] is the interchange between the new Woodrow Wilson Bridge about to go under construction, and the proposed parkway down to Fort Washington.

We have made an attempt here to take as little land as possible in order to assure two things: (1) sufficient land for park purposes for

the people in the region, and, (2) economical road construction in the future.

As you know, when you take too narrow a piece of land the road gets too close to the shore and there are problems of erosion, bridge construction, and other matters. We have avoided all costly development such as the Indian Queen Point and similar areas at the other end in an attempt to keep down the costs.

In this entire length of some 7½ miles there are only 16 houses to be acquired. In fact, I would like to submit for your review a copy of a complaint filed in the court of Prince Georges County, Md. This [indicating] is an injunction against the Maryland National Capital Park and Planning Commission by the owners of property in this area demanding that they be permitted to build a subdivision and the only way this agency can prevent the building of the subdivision is for us to have money ready to purchase the land. It is not fair to prevent people from developing their land for due profit unless you are ready to pay for it, and the time has come that there is either to be money provided or, in the opinion of the people who have been here much longer than I, the parkway will be a dead issue.

It is felt by everyone that it would be a great shame because it is an important part of the recreation plan and beautification of the Nation's Capital.

I submit that as our statement, and Mr. Kahlor can help me answer questions, if you wish.

Mr. KIRWAN. I am going to ask a few questions. First, you are doing a good job.

Mr. FINLEY. Thank you.

JUSTIFICATION FOR PARKWAY

Mr. KIRWAN. Authority for acquisition of land for this parkway was approved over 28 years ago, in 1930. Please explain why you believe this expenditure, which will run into millions, is necessary and desirable.

Mr. FINLEY. Sir, that is an excellent question, and it was asked last year by the United States Senate Committee on Interior and Insular Affairs. At that time days of hearings were held, and I am sure that your staff is familiar with the document which resulted. It is felt that the Potomac River is one of the greatest assets of the Washington area. It has been long the dream of residents here, as well as Senators and Congressmen in the past and present, that its shores could be preserved from ugly, or undesirable uses. It is felt by a consensus of the persons concerned that the parkway should be built and park lands should be provided to connect these great historic points in the Capital region in such a way to make it a beautiful drive and a worthwhile experience to visit these great sites. Not to do so would mean that the land adjacent to the river would be carved up for subdivisions; would be subject to health hazards and all forms of inappropriate development. If it is not done now under this procedure, the chances are it will never be done.

ROADS SERVICING AREA

Mr. KIRWAN. What roads now service this general area?

Mr. FINLEY. The Indian Head Highway, sir, which you can see on this map. It is a two-lane county or State highway with scattered commercial development on both sides, and with houses very close to it.

Mr. KIRWAN. When was the Indian Head Highway constructed?

Mr. PRICE. During World War II.

Mr. KIRWAN. That goes all the way down to Fort Washington?

Mr. PRICE. All the way to Indian Head beyond Fort Washington.

Mr. KIRWAN. When was the Mount Vernon Highway built? That is across the river from here.

Mr. PRICE. That was opened, I believe, in 1932.

Mr. KIRWAN. And the other one was built in World War II?

Mr. PRICE. Yes.

Mr. KIRWAN. Then you have another road called Oxon Hill Road.

Mr. FINLEY. May I add, with your permission, the Indian Head Road is primarily two lanes, a very substandard road for today's needs. The State of Maryland has plans to widen it but it will never be to parkway standards. The other important point that can never be overlooked in this kind of project is that the sum of 1,150 acres are primarily for a regional park, something which would serve the entire region as well as the millions of visitors to the Nation's Capital each year.

Mr. KIRWAN. What kind of road is the Oxon Hill Road?

Mr. PRICE. The Oxon Hill Road is an old county road and is obsolete.

LANDS ACQUIRED TO DATE

Mr. KIRWAN. Has any land been acquired to date in this area?

Mr. PRICE. The only land that has been acquired is by resolutions of the Commission under the Capper-Cramton Act. We have acquired for park use Fort Washington and Fort Foote.

We have acquired none by purchase.

ACREAGE TO BE ACQUIRED

Mr. KIRWAN. How many acres will have to be purchased in this whole thing?

Mr. FINLEY. We will acquire approximately 1,150 acres including some underwater acreage in this area [indicating], which is privately held. We will be taking everything inside the black line indicated on the map before you.

TOTAL COST OF LAND

Mr. KIRWAN. What will the total cost of the land be?

Mr. FINLEY. We estimated at this time the cost would be $2,700,000, an average cost of $2,350 an acre. I should say that much of the land for development is selling at much higher prices in subdivisions, and we feel this is a fair price. As you know, we require an appraisal of land by an outside independent appraiser before we buy.

Mr. KIRWAN. Is any improved property in this area?

Mr. FINLEY. Yes; there are some 16 houses, including Harmony Hall, which is very ancient and an important landmark. We have intentionally laid out the land in order to avoid houses wherever possible.

Mr. KIRWAN. Please give us some typical costs that will have to be paid for parcels of this land. Some of the parcels will be higher than others.

Mr. GROTECLOSS. The prices in general for unimproved land vary from about $3,500 to $4,000 an acre near the District and near where the proposed President Wilson Bridge is crossing, down to roughly $1,500 to $2,000 in the vicinity of Fort Washington.

You probably realize it is very hard to estimate a cost because when I made the first estimate about 2 years ago a subdivider from Alexandria had a contract with a Colonel Gillespie, who owned, I think, five or six hundred acres near Fort Washington, at a price of $900 an acre. The option was not exercised and now another man has it at $1,200 an acre, I believe. But he has sold some lots down there as high as $10,000. So the value is somewhere between $1,200 and $10,000. We hope to get it on an acreage basis, however, and not on a lot basis.

LAND COSTS FINANCED ON MATCHING BASIS

Mr. KIRWAN. If the total cost of the land will be $2,700,000, do you have assurance from the State of Maryland that it will pay half, as required by law?

Mr. FINLEY. We would like to submit at this time Mr. Kahlor's comments representing the county board.

Mr. KAHLOR. Mr. Chairman, there is no question but that we would pay our half. We already have authorization from the General Assembly of Maryland up to $1 million. Of course, if the costs go over that then obviously we will have to get additional authority, but I am sure there will be no trouble in getting it.

TOTAL FEDERAL COST OF PARKWAY

Mr. KIRWAN. What will be the total Federal cost of constructing the parkway?

Mr. FINLEY. According to estimates provided by the National Capital Parks, the total cost of construction will be approximately $8 million.

PRESENT MONETARY AUTHORIZATION

Mr. KIRWAN. What is the present authorization on the amount that can be appropriated for lands for the parkway?

Mr. FINLEY. The total authorization, sir, was some $7,500,000. Only $2,213,000 has been appropriated, and there is a balance in the authorization of $5,286,000.

FEDERAL ADVANCE OF MARYLAND SHARE

Mr. KIRWAN. Of the $2 million requested, $1 million is an advance by Prince Georges County for its share of the cost; is that correct?

Mr. FINLEY. Yes.

Mr. KIRWAN. The law provides that this advance may be recommended by the Planning Commission at its discretion. Why has the Commission requested this advance of Federal funds?

Mr. FINLEY. In order to assure the purchase of the lands at this most crucial time.

Mr. KIRWAN. What formal assurance do you have that it will be repaid?

Mr. FINLEY. I again refer to Mr. Kahlor.

Mr. KAHLOR. I would like to put into the record at this time a bill that was introduced in the Maryland House of Delegates and was adopted as such. The bill gives the Commissioners the authority to enter into an agreement, or issue bonds to the Government, or the National Capital Planning Commission for the repayment of this money. Actually, the full faith and credit of the county are behind it, and we did, in this fiscal year, set aside the sum of $118,000 to cover the first payment, but, due to the delay in it, of course, that amount has now been put into surplus in the county budget. But there is absolutely no question but that the county will pay, or repay, its share of the cost.

Mr. KIRWAN. When the legislature gave you the go-ahead signal, why did you not issue the bonds then, instead of making the request to the Federal Government? Why did not the State of Maryland take care of its share?

FINANCIAL CONDITION OF COUNTY

Mr. KAHLOR. Well, I would say, as far as the issuing of the bonds is concerned, of course, I know the members of this committee realize, as in similar areas of our type, the tremendous problems we have, particularly with regard to schools. We have a bonded indebtedness of $42 million for the county.

Mr. KIRWAN. You are only allowed to bond so much?

Mr. KAHLOR. There is no limit on it. I think it is about 7 percent of the assessable base that is usually considered a sensible amount. But we are faced this year, we just have had submitted another $18 million school building program. Of course, we will have to issue bonds again this fall under that program. Every time we go into the bond market, the more bonds we issue, correspondingly, our bond rating falls and our interest rates become higher. When we have any chance to get money without issuing bonds, it is to our advantage to do so, particularly in view of the fact that these would be noninterest bearing.

Mr. KIRWAN. On what terms will you repay the bonds? Not only your county, but, it seems, every county, along with the Federal Government, has some debts hanging over it. You are now faced with another $18 million for schools over the bonds you now have. That goes for about every county in the United States. On what terms will it be repaid?

Mr. KAHLOR. We will repay it, in accordance with the terms of the act, over the 8-year period, $118,000 plus per year.

Mr. FINLEY. The law prohibits us from spending any of the money until the bonds are in our hands.

Mr. KIRWAN. Is there anything further?

Mr. KAHLOR. I have nothing further to say, except the county is very much in favor of this project, naturally so, because it would be of great benefit to us. I would like to file with the committee this bill that fully explains the procedures for our repaying the money.

Mr. KIRWAN. Very well.

Mr. KAHLOR. If any further moneys are needed, I am sure we can secure them. There is a time element involved. If we do not borrow from the Federal Government, and the Commissioners decided to go ahead and borrow in the bond market, we could not do it until July or August of next year because we could not get another appropriation until January.

Mr. KIRWAN. I enjoyed having you here.

WEDNESDAY, JUNE 25, 1958.

SMITHSONIAN INSTITUTION

WITNESSES

DR. LEONARD CARMICHAEL, SECRETARY
DR. J. L. KEDDY, SECRETARY
F. A. TAYLOR, DIRECTOR, MUSEUM OF HISTORY AND TECHNOLOGY

SALARIES AND EXPENSES, SMITHSONIAN INSTITUTION

Program and financing

	In budget	Revised estimate	Difference
Program by activities:			
1. Management	$83,000	$83,000	----------
2. Operation of—			
United States National Museum	4,336,315	4,336,315	----------
Bureau of American Ethnology	61,135	61,135	----------
Astrophysical Observatory	366,328	366,328	----------
National Collection of Fine Arts	53,625	53,625	----------
National Air Museum	128,517	128,517	----------
Canal Zone Biological Area	37,066	37,066	----------
International Exchange Service	77,933	77,933	----------
3. General services:			
Maintenance and operation of buildings	1,492,948	1,545,748	+$52,800
Other general services	718,133	718,133	----------
Total obligations	7,355,000	7,407,800	+52,800
Financing: Unobligated balance no longer available	----------	----------	----------
Appropriation	7,355,000	7,407,800	52,800

Object classification

		In budget	Revised estimate	Difference
	SMITHSONIAN INSTITUTION			
	Total number of permanent positions	$845	$845	
	Full-time equivalent of all other positions	6	6	
	Average number of all employees	788	788	
	Number of employees at end of year	800	800	
	Average GS grade and salary	6.3 $5,014	6.3 $5,014	
	Average salary of ungraded positions	$3,750	$3,988	$238
01	Personal services:			
	Permanent positions	$3,642,682	$3,692,232	+$49,550
	Positions other than permanent	30,000	30,000	
	Other personal services	52,100	52,100	
	Total personal services	3,724,782	3,774,332	+49,550
02	Travel	52,525	52,525	
03	Transportation of things	61,450	61,450	
04	Communication services	52,830	52,830	
05	Rents and utility services	167,470	167,470	
06	Printing and reproduction	184,760	184,760	
07	Other contractual services	653,010	653,010	
08	Supplies and materials	172,590	172,590	
09	Equipment	1,440,383	1,440,383	
11	Grants, subsidies, and contributions	189,600	192,850	$3,250
13	Refunds, awards, and indemnities			
15	Taxes and assessments	5,600	5,600	
	Total, Smithsonian Institution	6,705,000	6,757,800	+52,800
	ALLOCATION TO GENERAL SERVICES ADMINISTRATION (Public Buildings Service)			
02	Travel	100	100	
03	Transportation of things	300	300	
04	Communication services	50	50	
06	Printing and reproduction	4,500	4,500	
07	Other contractual services	125,000	125,000	
08	Supplies and materials	500	500	
10	Lands and structures	519,550	519,550	
	Total, General Services Administration	650,000	650,000	
	Total obligations	7,355,000	7,407,800	+52,800

Mr. KIRWAN. We have now the Smithsonian Institution, Dr. Carmichael, we will be glad to hear from you.

WAGE BOARD INCREASE

Mr. CARMICHAEL. We ask you, Mr. Chairman, to approve the request for $52,800 to cover the cost of new rates of pay granted on May 18, 1958, for Wage Board employees. This could not be contemplated when our estimates were submitted.

As you know, the Smithsonian appropriation may be divided in four major parts. The first of these involves funds necessary to continue the many basic and important programs assigned to the Smithsonian by the Congress. Because this part of our budget has not been materially increased in recent years and because costs have risen in every area, we are hard put to it to continue this important assigned work with the funds available. It may be noted that we are absorbing in fiscal 1959 $58,437 for within-grade promotions.

Second, following a plan begun 5 years ago, we are engaged in the orderly renovation of the much too long neglected exhibits of our existing great buildings. As you know, these are the exhibits dealing with our natural resources and our history that are visited by millions of Americans each year. This renovation program had been long de-

layed, and we are now deeply involved in it. Each unit of work in this program involves contracts in excess of the amount that would have to be saved, if we were required to absorb the $52,800 required for additional compensation to Wage Board employees. Absorbing these funds in this part of the program might also mean separating staff members who have been recruited and trained with great difficulty for this specialized work.

Third, the largest unit of our funds is devoted to the all-important work of preparing exhibits for our new Museum of History and Technology Building. As pointed out previously, each of the exhibits required in this building takes many months of planning and construction work. If we are to be ready for the new building, the work on these units must go forward at the full rate made possible by our appropriated funds.

The fourth area of our budget involves the rehabilitation of the grounds and buildings of the Smithsonian Institution. As you know, most of our existing buildings are very old, and for years they were seriously neglected. This year a total of $58,000 was appropriated for this rehabilitation program. The three units of work that these funds will make possible are:

(1) Rehabilitation of sidewalks and filling in of an unused cave or basement area under the sidewalk on Independence Avenue behind the Arts and Industries Building. This work has long needed to be done. It seems not to have been touched since about 1881.

(2) The rehabilitation of the wooden floors and floor coverings in parts of the original Smithsonian building that was started in the late 1840's.

(3) The construction of concrete ramps in front of our storage buildings in Suitland so that during wet seasons mud will not make the use of these buildings almost impossible.

Each of these projects is very necessary from the standpoint of safety and efficiency, and this program itself represents a minimum of our needs in this area.

If you approve this appropriation of $52,800 it will mean that we can continue our carefully, and I think, economically planned program. Please allow us to continue this work.

JUSTIFICATION MATERIAL

Mr. KIRWAN. We will insert in the record page 9 of House Document No. 394 and the justifications.

"SMITHSONIAN INSTITUTION

"SALARIES AND EXPENSE

"For an additional amount for 'Salaries and expenses', $52,800."

This proposed supplemental appropriation is to cover the additional cost during fiscal year 1959 of wage-board pay increases granted May 18, 1958.

Salaries and expenses, 1959

Request for 12 months from July 1, 1958, to June 30, 1959	$52,800
Appropriations to date (1959)	$7,355,000
Budget estimate next fiscal year (1960) (exclusive of cost of pending Federal Employees Pay Act of 1958)	$7,407,800
Employment:	
Average number current appropriation (1959)	788
Average number involved this estimate	0

PURPOSE AND NEED FOR SUPPLEMENTAL FUNDS

The purpose of this increase is to provide funds for the pay increase for wage-board employees granted May 18, 1958.

JUSTIFICATION

The Smithsonian Institution's appropriation for salaries and expenses, fiscal year, 1959, is $7,355,000. In addition a supplemental estimate of appropriation amounting to $52,800, fiscal year 1959, required to cover the cost of new rates of pay granted on May 18, 1958, for wage-board employees, was transmitted by the President to the Congress June 9, 1958. That amount included $49,550 for personal services and $3,250 for directly related increases involving life insurance, social security, and retirement payments. After detailed consideration of the increase for personal services and other obligations for fiscal year 1959, it is urgently requested that the full amount of the estimate ($52,800) be appropriated by the Congress.

In coming to this conclusion, all objects of expenditures from personal services through equipment have been closely scrutinized. There appears to be no possibility of making the savings necessary to finance this wage-board increase of $52,800 without substantially curtailing our basic programs of building rehabilitation, exhibits renovation, and establishing the new Museum of History and Technology.

Mr. KIRWAN. When were these wage-board increases approved?

Mr. CARMICHAEL. On May 18, 1958.

Mr. KIRWAN. How many employees were involved?

Mr. CARMICHAEL. May I ask Dr. Keddy to answer that question?

Mr. KEDDY. 173.

Mr. KIRWAN. We just appropriated $7,355,000 for 1959. The justifications state that without this increase of $52,800 you would have to substantially curtail certain basic programs. Would you comment on this? You covered part of it in your opening remarks.

Mr. CARMICHAEL. Sir, we feel that it would necessarily curtail 1 of the 4 great programs we have spoken of. I do not think No. 1 I mentioned can be curtailed. No. 2 and No. 3 for the reasons I gave, I sincerely hope we will not have to curtail and because of the units of the work it would be very difficult to curtail.

The third are these rehabilitation programs that we have been trying to work out in a slow way during the last 3 or 4 years. I suppose they are the ones that would have to go by the board. I sincerely hope that will not be necessary.

Mr. KIRWAN. They are razing those temporary buildings on Constitution Avenue. Is that where the new museum will go?

Mr. CARMICHAEL. Yes.

Mr. KIRWAN. It will be a wonderful site. It will be much different from when they first established the Smithsonian. In that day it was a swamp.

Mr. CARMICHAEL. Yes, the Smithsonian proper was on what was known as the Island.

Mr. KIRWAN. We enjoyed your visit. I think you have a sympathetic ear.

Mr. CARMICHAEL. Thank you very much, Mr. Chairman.

WEDNESDAY, JUNE 25, 1958.

LINCOLN SESQUICENTENNIAL COMMISSION

WITNESSES

HON. JOHN SHERMAN COOPER, UNITED STATES SENATOR FROM THE STATE OF KENTUCKY
HON. F. JAY NIMTZ, A REPRESENTATIVE IN CONGRESS FROM THE STATE OF INDIANA
DR. WILLIAM E. BARINGER, DIRECTOR, LINCOLN SESQUICENTENNIAL COMMISSION
JOHN E. ALLEN, ASSISTANT EXECUTIVE DIRECTOR

Program and financing

	1959 presently available	1959 revised estimate	Difference
Program by activities: Planning the celebration (total obligations)		$142,000	+$142,000
Financing: Appropriation		142,000	+142,000

Object classification

		1959 presently available	1959 revised estimate	Difference
	Total number of permanent positions		10	+10
	Average number of all employees		9	+9
	Number of employees at end of year		6	+6
01	Personal services:			
	Permanent positions		$62,482	+$62,482
	Other personal services		238	+238
	Total personal services		62,720	+62,720
02	Travel		20,000	+20,000
04	Communication services		1,000	+1,000
05	Rents and utility services		2,000	+2,000
06	Printing and reproduction		37,000	+37,000
07	Other contractual services		11,000	+11,000
08	Supplies and materials		3,700	+3,700
09	Equipment		500	+500
11	Grants, subsidies, and contributions		4,080	+4,080
	Total obligations		142,000	+142,000

Mr. KIRWAN. The committee will come to order.

We will insert the item on page 8 of House Document 394 and the justifications in the record.

"LINCOLN SESQUICENTENNIAL COMMISSION

"For expenses necessary to carry out the provisions of the Act of September 2, 1957 (71 Stat. 587), $142,000."

The Lincoln Sesquicentennial Commission was created to prepare plans for the celebration in 1959 of the 150th anniversary of the birth of Abraham Lincoln. The Commission's preliminary plans were submitted to the Congress on February 28, 1958. This proposed appropriation is for financing the Commission's activities in connection with the celebration during the fiscal year 1959, and for preparation and printing of the Commission's final report to the Congress.

Lincoln Sesquicentennial Commission, 1959 fiscal year

Request for 12 months from July 1, 1958	$142,000
Appropriation to date	None
Obligations	None
Expenditures	None
Budget estimate next fiscal year	None
Employment:	
Average number, current appropriation	None
Number involved this estimate	10
Actual employment	None

PURPOSE AND NEED FOR SUPPLEMENTAL FUNDS

The Commission was created by the act of September 2, 1957 (71 Stat. 587) and is responsible for the preparation of an overall program for commemorating the 150th anniversary of the birth of Abraham Lincoln.

A report presenting the preliminary plans of the Commission was submitted to the Congress on February 26, 1958. The funds are required to finance activities of the Commission during the 1959 fiscal year.

JUSTIFICATION

Public Law 85–262, 85th Congress (71 Stat. 587), approved September 2, 1957, established a Commission to prepare an overall program and to include specific plans for commemorating the 150th anniversary in 1959 of the birth of Abraham Lincoln.

The Commission is composed of 28 members, 3 ex officio, 1 statutory, and 24 appointive, all of whom have been named.

The purpose and duties of the Commission were clearly stated in Public Law 85–262. As expressed in the act, the Congress established the Commission "to prepare an overall program to include specific plans for commemorating the 150th anniversary of the birth of Abraham Lincoln." In performing this duty the Commission is directed to "give due consideration to any similar and related plans advanced by State, civic, patriotic, hereditary, and historical bodies." The Commission may also "give suitable recognition such as the award of medals and certificates or by other appropriate means to persons and organizations for outstanding accomplishments in preserving the writings and ideals of Abraham Lincoln, or historical locations connected with his life." The legislation authorizes and requests the President "to issue proclamations inviting the people of the United States to participate in and observe the anniversary of the nationally significant historic event. * * *"

At a meeting of Commission members on January 6, 1958, Senator John Sherman Cooper, of Kentucky, was elected chairman. Several meetings of the Commission have been held, and others are scheduled for the purpose of formulating and executing plans for an appropriate nationwide celebration of the sequicentennial anniversary of the birth of Abraham Lincoln, one of our greatest Presidents and distinguished citizens.

The preliminary report of the Commission dated February 26, has been submitted to the Congress pursuant to Public Law 85–262. It stated that the Commission has considered suggestions for suitable commemorative activities and has, in a preliminary way, prepared a program. This program will be changed as necessary and, we feel sure, be amplified and improved as successive meetings of the Commission are held. Its broad outlines at the present time call for achieving the following ends:

1. That the Commission direct its attention to bringing to the American people and the peoples of the world the fullest understanding of the contributions of Abraham Lincoln to democracy, in order that a deeper awareness of his greatness may become possible.

2. That the Commission encourage States, localities, and private organizations to organize for themselves observances of the sesquicentennial of Lincoln's birth, and that it assist in plans for local observances with advice and guidance, where such are requested.

3. That consideration be given to awards of certificates, medals, or other recognition for distinguished newspaper articles or books, television and movies, dealing with Lincoln and his work.

4. That the Commission request the issuance of special stamps and coins to commemorate the Lincoln sesquicentennial.

5. That it encourage the collection and dissemination of basic materials such as manuscripts, newspapers, pictures, and maps, relating to Lincoln, so that such material may be preserved and made more easily available to students.

6. That it encourage and participate in a program of publications relating to Lincoln, including basic sources, guides, bibliographies, indexes, and other aids to research, writing, and understanding of this great American.

7. That it encourage all communication mediums to participate in the observance of the sesquicentennial of the birth of Abraham Lincoln.

8. That it sponsor a group of speakers to represent it at appropriate observances.

9. That it consider, for possible recommendation to the Congress, the advisability of the Congress holding commemorative exercises on February 9, 1959.

10. That it do everything possible, by appropriate means, to develop among the Nation's schools, colleges, and universities, museums, libraries, historical societies, and historical offices of the Federal Government, a deeper appreciation and keener interest in the rich heritage of national experience with particular reference to Abraham Lincoln.

11. That it seek the cooperation of Federal agencies in carrying out the purposes of the legislation.

12. That through these programs it seek to emphasize the principles and ideals exemplified by Abraham Lincoln and their application to the present day.

The Commission has appointed its Executive Director, Dr. William E. Baringer, a distinguished Lincoln scholar; its Director of Research, C. Percy Powell, formerly of the Library of Congress; and an Assistant Executive Director, John E. Allen. The temporary headquarters of this staff and its secretarial help is in the Lincoln Museum, Washington, D. C., but larger and more suitable space has been requested and is being made available at the National Archives Building.

Because of the national scope of the celebration, and the short time remaining before the date of the celebration, preparation and execution of the plans must move along at a rapid pace. They must, however, be predicated upon proper and scholarly research, involving cooperation and coordination of the programs of various States, civic, and patriotic organizations and individuals. The plans must be defined and given proper direction. The Commission's functions will be the coordination of these programs between and among the many participating groups, to encourage sponsorship and observance at local levels, and furnish guidance in carrying out appropriate and dignified celebrations.

The estimate of $142,000 is requested to finance activities of the Commission during the 1959 fiscal year. This amount is the minimum required to cover travel and per diem expenses of Commission members while engaged in the discharge of their duties; salaries and expenses of a small staff to perform research, prepare publications, newsletters, program suggestions, fact sheets, chronologies, handbooks, and handle a volume of correspondence that will be generated by the Commission's functions and relations with interested groups and individuals; and the preparation and printing of the final report of Commission activities for transmittal to the Congress.

Mr. KIRWAN. You may proceed, Mr. Nimtz.

Mr. NIMTZ. Mr. Chairman, on behalf of the Lincoln Commission we are here this morning in regard to our request for appropriation for the next coming fiscal year.

Since last being with you, we do have a staff consisting of Prof. William E. Baringer, of Florida and John Allen as our assistant director. Of course Conrad Wirth, our secretary, Director of the National Park Service, is here.

Mr. KIRWAN. Senator Cooper, would you like to insert your statement and then summarize the request for the record.

Senator COOPER. Yes, sir.

(The statement follows:)

STATEMENT BY SENATOR COOPER

Mr. Chairman, the act of September 2, 1957 (71 Stat. 587), authorized the establishment of a Commission to prepare an overall program and to include specific plans for commemorating the 150th anniversary of the birth of Abraham Lincoln.

The Commission is composed of 28 members, 3 ex officio, 1 statutory, and 24 appointive, all of whom have been named. The first meeting of the Commission was held on December 11, 1957, for organization purposes.

Pursuant to the enabling legislation establishing the Commission, a report has been submitted to the Congress, which presents the preliminary plans of the Commission in carrying out its functions.

Funds were first provided to cover activities of the Commission by the Second Supplemental Appropriation Act, 1958, which was approved on March 28, 1958. The amount of $37,500 was provided by this appropriation, and is to cover expenses during the 1958 fiscal year only.

An Executive Director, his Assistant, and supporting staff have been employed by the Commission to carry out research and prepare other material vital to appropriate commemoration honoring one of our most distinguished citizens and Presidents. Their work must continue during the 1959 fiscal year if the program envisioned by the Commission is to be carried out.

Because of the national scope of the celebration and the short time remaining before the sequicentennial anniversary, preparation and execution of the plans must move along without delay.

The estimate of $142,000 is requested to finance Commission activities during the 1959 fiscal year. This amount is the minimum required to permit the Commission to carry out its functions in an appropriate manner during the 1959 fiscal year, and complete its final report of its activities for transmittal to the Congress which it must do pursuant to law.

Senator COOPER. Mr. Chairman, our purpose in coming here is to present the budget request for the Lincoln Sesquicentennial Commission. This request was made to the Bureau of the Budget and approved by them and is now before you. It will cover the expenses of the Commission during the next fiscal year. The amount which is requested is $142,000.

It is an estimate. The various items are set out in the request. It will provide for the maximum force of 10 people. It is our hope that we will not need all of them, but it is a request for that number.

The other items cover the expenses of the Commission and are set out here. It covers the matter of travel, communications, rents and utilities, printing and reproduction and other contractural services, supplies and materials, equipment, grants, subsidies, and contributions. That is an estimate. We hope very much to keep these expenses at the lowest possible level.

Mr. KIRWAN. Does that complete your statement, Senator?

Senator COOPER. I would like to point out that since we were before you to ask for money to take care of our expenses during the present fiscal year the Commission has made substantial progress and that we have met several times. We have employed an executive director and assistant executive director. We have established offices in the Archives Building. We have begun to work upon several projects. I think we have made a very good start.

I would point out that this celebration of the Lincoln sesquicentennial by its very terms marks the 150th year. It means there will not be another such Lincoln celebration for I would assume another 50 years. Frankly, I have been concerned somewhat myself about the total appropriations for which we ask because I know that at this time the question of expenses is a matter of great importance. However, considering the fact it is a celebration the memory of which will last, we hope, for 50 years—althought it must be done in 1 year—and considering that there has been such a response in this country and throughout the world to the celebration movement, I think this request can be justified.

Mr. KIRWAN. Off the record.

(Discussion off the record.)

Senator COOPER. We have had several meetings of the Commission. You may have read about some of them. In those meetings we appointed members of the Commission, who are outstanding citizens, to meet and to develop a program which will be fitting for the observance of this sesquicentennial.

I must say that upon my first association with this I did not realize the expenses of such a commission. I did not realize what a national celebration program would cost.

A committee in our Commission, made up of an outstanding group of men, thought that if this Commission was worthwhile, it ought to engage in a program which would have real meaning. The purpose was:

One, to assist and cooperate in the celebrations which are to be held throughout the United States, that is, in every State of the Union.

Second, to try to draw others into this celebration, to encourage it in other countries throughout the world. I may say from the report we have had from the USIA, that seems to be progressing very well.

Third, to undertake projects in this country to be of lasting value. Part of this would be effected through the Office of Education; other projects would be worked out through the Library of Congress.

SPECIAL PROJECTS

I am not going to come here without being frank. This budget we have presented here would cover the normal operating expenses of the staff and the Commission. Following the deliberations we had in committee, a special projects program was developed which would cost additional money. I want you to know this because there will be a request made for that purpose, too. Whether your committee feels it is justified is another thing. I want to let you know that it will come up.

Mr. KIRWAN. The committee will give your request every consideration. We know from sitting on this side for a number of years that celebrations of this nature involve many expenses and that this will be a big affair.

Senator COOPER. My point in saying this is to make it clear we will ask for additional funds for these special programs which have been recommended by the Commission.

Mr. KIRWAN. You will have a sympathetic ear.

Senator COOPER. Thank you.

Mr. KIRWAN. Is that all, Senator?

Senator COOPER. Yes.

STATEMENT OF REPRESENTATIVE NIMTZ

Mr. KIRWAN. Congressman Nimtz.

Mr. NIMTZ. We thank you for your kindness this morning. I would like to say in further support of the Senator's remarks that a number of members of the Lincoln commission from Indiana were here and have spent 2 weeks with our group in this city discussing what they can do to cooperate in the observance of this anniversary of

Lincoln's birth. They are very well underway with their program. Recently they had a ceremony at the grave of Nancy Hanks and at other points in Spencer County, which is part of the Lincoln country in Indiana, and over 20,000 people were in attendance. It is my understanding from the Honorable Roy Combs, auditor of the State of Indiana and chairman of the Indiana Lincoln Sesquicentennial Commission, that this is one of the largest crowds ever to gather in the county. The Indiana commission also has plans for various ceremonies in the Lincoln country this July 4 weekend.

We, of course, will give them no money. They are self-supporting. We will give no State any money. Further there is no entertainment expense item in this request for funds. The chairman of the Ohio commission was here last week and spent several days with us in regard to their program.

The group from Illinois and Kentucky are also getting started and have been in contact with us.

The Indiana commission has incorporated a Lincoln Foundation to raise funds of their own and already have received subscriptions of several hundred thousand dollars so that they will be self-supporting. There is no resquest for funds here for entertainment, or to give funds to any State.

Mr. KIRWAN. Does that complete your statement?

STATEMENT OF REPRESENTATIVE CHELF

Mr. NIMTZ. Except that our colleague, Mr. Chelf, of Kentucky, had hoped to be here this morning and could not be and has submitted a statement which I will present to the Chair now.

Mr. KIRWAN. It will be included in the record.

(The statement of Mr. Chelf follows:)

GENTLEMEN: My name is Frank Chelf, Representative from the Fourth Congressional District of Kentucky and a member of the Lincoln Sesquicentennial Commission. I would like very much to urge you, gentlemen, to appropriate the full amount requested by Hon. John S. Cooper, Senator from Kentucky, and Hon. F. Jay Nimtz, Representative from Indiana, for the success of the 150th anniversary of our great President Abraham Lincoln.

We are trying to do a job right—but it will take this amount of money in order to get the job done as it should be.

Thank you very much.

STATEMENT OF DIRECTOR BARINGER

Mr. KIRWAN. Mr. Baringer, would you like to make a statement?

Mr. BARINGER. These two Members of Congress who have just testified have done an excellent job. All I need do, I believe, is to endorse their statements and to point out that as you say, Mr. Chairman, this will be a big event. It will be the first sesquicentennial the United States ever celebrated. We have had sesquicentennials for the United States itself and for the city of Washington; but a sesquicentennial for a statesman is something new. Lincoln is of sufficient stature in American history and in developing American traditions to justify such a celebration. We need the requested appropriation in order to implement that.

Mr. KIRWAN. Mr. Allen.

STATEMENT OF JOHN E. ALLEN

Mr. ALLEN. Thank you, gentlemen, for permitting me to appear for just a moment. May I file a statement which the secretary has? I have nothing further to say.

Mr. KIRWAN. Very well. It will be included in the record.

(The statement of Mr. Allen follows:)

STATEMENT OF MR. JOHN E. ALLEN, ASSISTANT EXECUTIVE DIRECTOR, LINCOLN SESQUICENTENNIAL COMMISSION

Mr. Chairman and gentlemen. Abraham Lincoln is not only regarded as one of the greatest Presidents, the 16th, of the United States, but is one of the greatest historical personages of all times. The details of his greatness are known to schoolchildren and other citizens everywhere, and in the year 1959 we will be celebrating the 150th anniversary of the birth of the "savior of our country." Much as George Washington was the "father of our country," we must recognize Lincoln, as I have stated, as the savior and in a sense preserver of our Federal constitutional form of government.

Lincoln programs are already underway to celebrate the sesquicentennial in the States of Kentucky, Indiana, Illinois, Ohio, Connecticut, Tennessee, South Dakota, Wisconsin, and in other States. It is the main purpose of our National Lincoln Sesquicentennial Commission to coordinate the activities in the States. We also wish to counsel with them with regard to their plans, and our headquarters office has just now been set up. We are now ready to begin functioning and we hope to in the immediate future—including the beginning of the fiscal year 1959—to implement the splendid plans our Commission has already outlined in a preliminary way.

Accordingly, and in view of the excellent presentation already made by witnesses of our Commission, may I also request immediate approval by the committee of the request for $142,000 for use by the Commission during the next fiscal year. A number of groups and individuals, in addition to many in the States referred to above, have indicated their interest in beginning cooperation with us at a very early date.

The organizational groups and individuals ready to work with us exceeds 40,000 persons. These groups and individuals include the following:

The Lincoln Group of the District of Columbia.
Lincoln Fellowship of Southern California.
Lincoln Memorial University, Harrogate, Tenn.
Ladies of the Grand Army of the Republic.
Sons of the American Revolution.
Columbia Historical Society, Washington, D. C.
Dr. J. Monaghan, consultant, Wyles Collection of Lincolniana, University of California, at Santa Barbara.
Ralph G. Lindstrom, Lincoln speaker and writer, of Los Angeles, Calif.
Prof. Earl W. Wiley, emeritus professor of history, Ohio State University, Columbus, Ohio.
Gen. U. S. Grant III, Washington, D. C.
Judge Edward S. Delaplaine, Lincoln student and Maryland historian, Frederick, Md.

Mr. KIRWAN. Speaking for the committee, every American understands the meaning of the name of Lincoln. This is probably the biggest celebration we have ever had and I mean with sincerity the committee will give a sympathetic ear. The Commission has outstanding people.

I have just a few questions.

USE OF APPROPRIATED FUNDS

Please summarize for us how the Commission expended the $37,500 appropriated for this year. Will you have an unobligated balance on June 30?

Mr. BARINGER. Not much. It is my understanding we had $37,500 to spend. We needed it in order to get a dignified and adequate office started and staff hired. Not much of it went for staff salaries because we were late in getting the appropriation. It took time to get under way.

Mr. KIRWAN. If you can, provide a little breakdown so the information will be available in the record.

(The information referred to follows:)

The $37,500 appropriated for the 1958 fiscal year has been and by June 30 will be utilized as follows:

Salaries of staff for May and June	$7,100
Painting and renovating office space including installation of fluorescent lighting	4,048
Office furniture and accessories	8,875
Reimbursement of travel for Commission members	2,279
Office equipment and supplies including stationery, postage, telephones, etc	4,266
Office supplies, including letterheads and postage	2,932
Printing of official Lincoln Handbook	8,000
Total	37,500

USE OF FUNDS REQUESTED FOR 1959

Mr. KIRWAN. What are plans for spending the $142,000?

Mr. BARINGER. To continue with the program outlined for which the foundation is now laid. The foundation is now down. We start putting up the building: Part is for salaries, part for travel. Those 2 items make up more than half the $142,000. The rest are incidentals following those major expenses.

Mr. KIRWAN. Please insert another small statement in the record showing how the funds will be used.

Senator COOPER. You want a justification of these various items?

Mr. KIRWAN. Yes, so the information will be on record.

(The statement referred to follows:)

The estimate of $142,000 for the 1959 fiscal year to carry out activities of the Commission is programed for use as follows:

Salaries and expenses of the operating staff	$72,500
Travel and per diem expenses of Commission members	17,000
Printing and reproduction of handbooks, newsletters, fact sheets, chronologies, etc	36,500
Contractual services	10,000
Communication and utility services, supplies and materials, etc	6,000
Total	142,000

The Commission has prepared an estimate for additional funds for the 1959 fiscal year to carry out special projects in connection with the anniversary celebration. These cultural and educational projects will be of permanent value and usefulness to the people of the Nation, especially schoolchildren. Firm estimates for these special projects have not yet been approved, but the cost as now estimated will be in the neighborhood of $600,000. The projects consist of teaching aids: prizes for contests, essays and other writings; an up-to-date Lincoln Bibliography; a volume on the daily activities of Lincoln; and medals and awards.

SCOPE OF SUPPLEMENTAL

Mr. KIRWAN. I understand this request is to cover the remaining expenses of the Commission, including the final report to the Congress. Is that correct?

Mr. WIRTH. This will not be the final request of this Commission. I am stepping in here because the National Park Service is acting as bookkeepers and administrators of the Commission's funds. We will see that the above questions are properly answered by the requested insertions.

It will not be the last request for funds. As the Senator says, there will be another request for special projects which are now clearing the Bureau of the Budget. Also 1959 is the celebration year. We will have to appear again next year for the half year beginning July 1, 1959. That is to say, this money expires on June 30, 1959, and the whole year is the celebration year. So in 1959–60 we will likewise have to have an appropriation.

Mr. KIRWAN. Here is what the President's communication says:

Lincoln Sesquicentennial Commission was created to prepare plans for the celebration in 1959 of the 150th anniversary of the birth of Abraham Lincoln. The Commission's plans were submitted to Congress on February 28, 1958. This proposed appropriation is for financing the Commission activities in connection with the celebration during the fiscal year 1959 and for preparation and printing of the Commission's final report to Congress.

Mr. WIRTH. Is that the wording of the justification? It is incorrect, because it is a whole year's celebration and the final report will not be submitted to Congress until the celebration is over and this money expires on June 30, 1959.

Mr. KIRWAN. What are these special projects for which estimates are pending?

Mr. WIRTH. That is now clearing the Bureau of the Budget. I was over there yesterday in support of it informally. It has to do with certain special projects, writings, et cetera, pertaining to Lincoln. It will be coming up here before you I hope very shortly.

Mr. KIRWAN. Just so we know it is nothing for a parkway or somethink like that: but something about Lincoln would be appropriate.

Mr. WIRTH. It is entirely about Lincoln, I can assure you. It has nothing to do with the George Washington Parkway.

Senator COOPER. May I intervene a moment? I think I know what the committee wants. They want to know specifically what we are going to ask for and what our total will be. You have a right to know. I suggest that when we file the other justifications you have asked for, and the other material, that at the same time we file with you (although it will be a little premature) a statement of the further funds that the Commission will ask for, naming the projects, so that information too will be before you when you act upon this request. I think the whole picture will then be before the committee.

Mr. KIRWAN. That is what we want, so there will be no misunderstanding connected with this supplemental.

Senator COOPER. I will ask as Chairman of the Commission that all that be filed with you.

Mr. WIRTH. May I ask for clarification? Do you mean besides the special projects the proposed 1960 appropriation? It would be hard to get that.

Mr. BARINGER. Just the 1959 request, i. e., to June 30, 1959.

Mr. WIRTH. The next request for the period after June 30, 1959, would be for about 7½ months.

Mr. MAGNUSON. I want to suggest, Mr. Chairman, that this group

not hire any secretaries to mark their proceedings "confidential" as occurred recently.

Mr. BARINGER. We have already dealt with that, sir.

Senator COOPER. I suppose you may be joking, but there have been questions raised about that and it is fair to put it in the record. We have had several meetings of the Commission, holding the meetings in the Library of Congress. They kindly furnished a secretary to take down the notes and furnished the minutes. I can assure you there was no direction from the Commission or any feeling on the part of the Commission that any of our proceedings are in any sense confidential. I think it was simply, from what I understood after making an inquiry, that the reporter, just as a caution going out to the members, put that on it. It had no other significance.

Mr. KIRWAN. Thank you for your excellent presentation.

WEDNESDAY, JUNE 25, 1958.

CIVIL WAR CENTENNIAL COMMISSION, 1959

WITNESSES

KARL S. BETTS, EXECUTIVE DIRECTOR
CONRAD L. WIRTH, DIRECTOR, NATIONAL PARK SERVICE
HON. WILLAM M. TUCK, A REPRESENTATIVE IN CONGRESS FROM THE STATE OF VIRGINIA
HON. WINT SMITH, A REPRESENTATIVE IN CONGRESS FROM THE STATE OF KANSAS

Program and financing

	Presently available	Revised estimate	Difference
Program by activities: Planning the commemoration (total obligations)		$63,000	+$63,000
Financing: Appropriation		63,000	+63,000

Object classification

		Presently available	Revised estimate	Difference
	Total number of permanent positions		6	+6
	Average number of all employees		6	+6
	Number of employees at end of year		5	+5
01	Personal services: (Permanent positions)		$39,285	+$39,285
02	Travel		7,000	+7,000
04	Communication services		500	+500
05	Rents and utility service		6,000	+6,000
06	Printing and reproduction		4,000	+4,000
07	Other contractual services		2,000	+2,000
08	Supplies and materials		1,490	+1,490
09	Equipment		500	+500
11	Grants, subsidies, and contributions		2,225	+2,225
	Total obligations		63,000	+63,000

Mr. KIRWAN. Next is the Civil War Centennial Commission. We will insert at this point the pertinent part of House Document No. 394 and the justifications.

(The material follows:)

"CIVIL WAR CENTENNIAL COMMISSION

"For expenses necessary to carry out the provisions of the Act of September 7, 1957 (71 Stat. 626), $63,000."

The Civil War Centennial Commission was created to prepare plans and programs for a nationwide observance of the centennial of the American Civil War during the period 1961–65. Pursuant to the act of September 7, 1957 (71 Stat. 626), the Commission presented its preliminary plans to the Congress on February 28, 1958. This proposed appropriation is to provide for expenses during the fiscal year 1959 in carrying out the Commission's plans.

Civil War Centennial Commission, 1959 fiscal year

Request for 12 months from July 1, 1958	$63,000
Appropriation to date	None
Obligations	None
Expenditures	None
Budget estimate next fiscal year	None
Employment:	
Average number, current appropriation	None
Number involved, this estimate	6
Actual employment	None

PURPOSE AND NEED FOR SUPPLEMENTAL FUNDS

The Commission was created by the act of September 7, 1957 (71 Stat. 626) and is responsible for the preparation of an overall program for commemorating the 100th anniversary of the Civil War.

A report presenting the preliminary plans of the Commission was submitted to the Congress on February 28, 1958. The act requires that reports of activities of the Commission be presented to the Congress annually. The funds are required to finance activities of the Commission during the 1959 fiscal year.

JUSTIFICATION

Public Law 85–305, 85th Congress (71 Stat. 626), approved September 7, 1957, established the Civil War Centennial Commission to prepare an overall program to include specific plans for commemorating the 100th anniversary of the Civil War during the period 1961–65.

The Commission is composed of 3 ex officio members, 2 statutory members, and 20 appointive members, all of whom have been named.

The Civil War was the greatest test our country ever faced. Built of the heroism and endurance that were drawn from men and women of both sections by devotion to principles valued more than life itself, it was our most profound and tragic emotional experience. What was lost in it was lost by all of us; what was finally gained, the preservation of the American Union as an instrumentality of freedom for all the peoples of the world—was gained by all of us. The loss, the gain, and experience itself are a common national possession.

To commemorate the centennial of the Civil War, the observances must give us a new understanding of the way in which Americans built from sacrifice and suffering an enduring Nation and a lasting peace. Human history contains few lessons more inspiring than this. The centennial observances must be a new study of American patriotism, and this study must be based on a broad knowledge of the underlying facts—a closer look at a chapter of our own history, and the chapter must be accurate.

The Commission expects to enlist the entire Nation in observances of the centennial. To accomplish this, it will inform the country of the centennial not only through standard news media but also through its own newsletter and through correspondence with interested groups. The Commission hopes to formulate and coordinate programs that are flexible in character so as to fit

into the observance activities of other Federal agencies; State and local governments; civic, patriotic, hereditary, and historical groups; schools, universities, learned societies, and libraries; the informational media; and the arts. Every segment of the citizenry will be invited to participate. The Commission will encourage States and local groups to organize for themselves observances of the anniversaries of Civil War events with which they were especially concerned.

The first meeting of the Commission was held on December 20, 1957, at which time Gen. Ulysses S. Grant 3d was elected Chairman, and Hon. William M. Tuck, Vice Chairman. Subsequently, the Commission has met 3 times and expects to hold additional meetings during fiscal year 1959. It has appointed special committees to which it has assigned specific tasks and has established a 7-member Executive Committee, under the chairmanship of Hon. Wint Smith, which is broadly empowered to deal with important matters on behalf of the full Commission and to give continuity to the work of the parent body between sessions thereof. Mr. Karl S. Betts has been appointed Executive Director by the Commission and he is now actively engaged in helping to establish centennial commissions in each of the 48 States and in the District of Columbia. All local observances will be handled by these groups with the cooperation of the National Commission. The Director is also developing a coordinated plan in conjunction with the American Automobile Association and the National Association of Travel Agencies and other similar groups to promote tourist travel to Civil War battlesites during the centennial years. Plans are also being developed to tie in the national advertising of many large corporations with the centennial program. A Sunday supplement to be carried by all American newspapers with a new modern history of the war, written by leading historians, is projected.

A major feature of the Commission's work thus far was the national assembly, which was convoked in accordance with section 6 (b) (2) of the enabling legislation. The assembly, which met in Washington on January 14–15, was composed of representatives of 24 State and Territorial governors and 75 civic, patriotic, and historical groups. It made a number of valuable and constructive recommendations as to the most appropriate ways of observing the Civil War Centennial and pledged full cooperation with the Commission, on behalf of the governors and organizations represented.

The Commission recently submitted its first annual report to Congress, summarizing its initial work and outlining its preliminary plans.

The estimate of $63,000 is requested to provide for financing Commission activities during the 1959 fiscal year. This will provide for travel and per diem of Commission members while engaged in the discharge of their duties, and a small administrative staff and general expenses. The staff will carry out research; prepare publications, newsletters, program suggestions, fact sheets, chronologies, handbooks for organizations; and handle voluminous correspondence that will generate as a result of the Commission's relations with officials of hundreds of national and local organizations. The estimate of $63,000 represents what the Commission believes to be the minimum amount required if it is to be assured of successful prosecution of the program during the 1959 fiscal year.

STATEMENT OF REPRESENTATIVE TUCK

Mr. KIRWAN. Congressman Tuck, you may proceed.

Mr. TUCK. Mr. Chairman and members of the committee, as Vice Chairman of the Civil War Centennial Commission, I deeply appreciate the opportunity to appear before you in support of our request for an appropriation of $63,000 for fiscal year 1959. I regret that our distinguished Chairman, General Grant, cannot be present today.

In establishing our Commission by the joint resolution of September 7, 1957 (71 Stat. 626), Congress gave us a broad mission. It told us "to provide for appropriate and nationwide observances" of the Civil War Centennial. It directed us to prepare both an overall program and specific plans to commemorate that event—the greatest test our country ever faced, one built of the heroism and sacrifice of men and women of both sections, and one that contributed immeasurably to our common heritage.

Our 25 members are dedicated to that mission and are zealously planning a 4-year program that will enlist the active and direct participation of all of our people—one that will call forth their initiative, ingenuity, and resources, acting through their hundreds of organizations, public and private, throughout the Nation.

To this end, our Commission and our executive committee have each held three meetings. Our small but able staff, only recently recruited and just as dedicated as are the Commission members, is hard at work, and we have submitted to Congress our first annual report outlining our plans. Congress, too, has been generous; it has given us ample powers and $37,000 for the present fiscal year, and I assure you that we are grateful.

But we need additional funds for the coming year. We are now asking for $63,000, the balance thus far authorized. Actually, we need more. We need money not only to pay our small staff, but also to inform the Nation of the forthcoming centennial and to help our citizens to develop their own centennial activities. My colleagues who are with me can tell you about those activities.

I assure you that such funds as are made available will be spent frugally and that everything we do will have the single aim of making the centennial an event worthy in all respects of the trust that Congress has reposed in us.

Mr. KIRWAN. Does that complete your statement, Governor?

Mr. TUCK. Yes: this is a mammoth celebration. So far as I know, nothing like it has ever before been done by the Congress or by the American people. The Civil War represents the most important period in the history of our country. One cannot reflect upon that period, upon any event of the period, without having a sense of the highest pitches of patriotism as exemplified by the activities of the soliders and sailors on both sides, as well as by the men, women, and children who remained at home.

It is an event which has created widespread interest all over the Nation, in States even where no part of the conflict took place. Many of the States have already appointed commissions and have made appropriations of their own. One of those is my own State of Virginia. The national governors' conference, at its recent meeting in Florida, went on record as approving State participation in the centennial. A resolution was passed indicating their complete cooperation.

LIMITED AUTHORIZATION

Unfortunately, the bill creating our Commission was amended by the committee. We were having some difficulties getting it through. While it was properly drawn and introduced to make provision for the proper amount of authorization, the exact amount of which I do not now recall, it was amended so as to limit it to $100,000.

I have recently, at the suggestion of the Commission, introduced another bill removing that limitation. That bill is now before one of the subcommittees of the Judiciary. We are requesting this distinguished committee to grant us the remainder of the authorization in order that we may keep up our work and also in order that we might keep ourselves alive until we can get authority for more money. I am being blunt and frank about it. It would be contrary to my way of

doing things if I did not tell you, frankly, we are going to have to have more money. How much more I do not know. But our plans envision a 4-year program. The unusual amount of interest that existed when the Commission was formed has already been enhanced by the meetings we have had. I surmise that we will have to have an appropriation for each year during the 4 years of the existence of the Commission. We have a budget here that we fixed up for 1959. We plan to employ 8 people and have 6 now. We put their salaries down at the very lowest possible figure to get anybody competent. I think when you read over this budget, you will see it is a very modest one.

We have Mr. Betts, Mr. Wirth, Mr. Wint Smith, chairman of our executive committee. He is a very able and, as you know conservative Member of the Congress.

Mr. KIRWAN. Thank you, Governor.

Wint, do you have a statement?

STATEMENT OF REPRESENTATIVE WINT SMITH

Mr. SMITH. I want to ask that my statement be submitted and made part of the record.

Mr. KIRWAN. Very well.

(The statement of Mr. Wint Smith follows:)

The budget assigned for Civil War Centennial Commission salaries for 1959 covers only a small staff which will have to work at top speed to handle a national promotion job. Our estimates for next year are based upon what we consider to be the absolute minimum requirements.

The year 1959 will require larger expenditures because it will be an organization year as it includes the establishment of 48 State commissions and the launching of a national publicity campaign to newspapers, magazines, etc., throughout the country. There will be considerable travel by the staff and certain members of the Commission to meet the rapidly increasing demand for speakers. Civil War Roundtables, civic and patriotic groups, and many others are asking us to send them someone to help lay plans for local observances of important events.

Planned reenactments, such as those at Antietam and Fort Sumter, will require considerable planning and some expense this year in order to get these programs organized.

Manuals for State commissions, informative booklets for use in schools, etc., must be produced and distributed.

It is quite obvious that the appropriation of $63,000 for 1959 will not be adequate to carry out the minimum program which was outlined by the Congress when it enacted Public Law 85–305.

Mr. SMITH. I concur in what Governor Tuck said about the necessity of the timeliness of trying to do something to commemorate the War Between the States.

STATEMENT BY MR. BETTS

Mr. KIRWAN. Do you have a statement, Mr. Betts?

Mr. BETTS. Mr. Chairman and members of this committee, the chief aim of the Civil War Centennial Commission is to bring home to the American people the story and lessons learned from our Civil War. To do this effectively, we have determined that we must attain the following objectives:

1. Secure the appointment of State centennial commissions in each of the 48 States. This program is already well advanced. At present, 9 States have appointed centennial commissions and they are actively at work. Some 27 States have legislation pending to estab-

lish these commissions, and others are being urged to take action by interested local groups. Eleven States have appointed liaison representatives to work with us at our national headquarters. In the remaining 13 States, no action has been taken as yet because the State legislatures do not meet until 1959.

2. Assist local communities through national publicity and other aids in staging reenactments of important events.

3. Develop a coordinated publicity plan with the American Automobile Association, National Association of Travel Organizations, and with the Association of American Railroads, airline and bus associations to encourage tourist travel to Civil War points of interest. These plans are already well advanced.

4. Maintain liaison with civic, patriotic, and historic groups, State commissions, historical societies, etc., through personal services and the publication of a monthly newsletter.

5. Maintain a continuous national publicity service to acquaint the American public with the details of the 4-year-long centennial program.

The National Commission is likewise working to establish contact with the heads of America's largest corporations in order to coordinate our program with the publicity and advertising campaigns of these concerns. We are developing plans to publish a Sunday supplement to be published monthly and furnished to all American newspapers. This supplement will contain a freshly written, up-to-date account of happenings 100 years ago, and will be written by America's outstanding historians. We hope that the production and distribution will be without expense to the Government.

We are likewise exploring the possibility of operating a mobile museum to visit all sections of the country which will carry the story of the Civil War to those who are unable to visit the historic spots of interest. We are promised the full cooperation of the Smithsonian Institution and the National Archives in preparing these exhibits.

We respectfully submit this brief outline of our activities in the hope that it will acquaint you more fully with the tremendous task which we have undertaken to fully dramatize the historic events of a century ago—the story of the aspirations and enthusiasms of our forebears which still constitutes the finest heritage that has been given to Americans.

Mr. KIRWAN. This is another great commemoration, the Civil War Centennial. I will tell the Commission, as I did the preceding Commission, that we will have a sympathetic ear on your request and I hope that you appreciate the necessity of staying within the $63,000 limitation until you get a change in the authorization.

Mr. TUCK. It will be our purpose to do so.

CHATTAHOOCHEE NATIONAL FOREST

WITNESS

HON. PHIL M. LANDRUM, A REPRESENTATIVE IN CONGRESS FROM THE STATE OF GEORGIA

Mr. KIRWAN. Congressman Landrum, do you have a statement?

Mr. LANDRUM. Mr. Chairman and members of the committee, I apologize for seeking your indulgence at this time of the day and I

apologize further for seeking your indulgence in my request for a supplemental appropriation.

At the outset, I would like to make an explanation for coming in connection with the application for the supplemental.

Sometime last fall we started this survey on this project in the Chattahoochee National Forest. It was delayed and in April of this year it developed that they would have to get some more information different from what they had already developed before they could give any accurate estimate or before they could have any full understanding with the State park adjacent to it. It was not until the last few days that I got the necessary data to bring to the committee and that accounts for this delay and my seeking the supplemental at this time.

I ask for a supplemental appropriation for the United States Forest Service in the roads and trails program for the Chattahoochee National Forest in Georgia.

It is a road leading from what is known as the Unicoi State Park operated by the State of Georgia into the National Forest and the Chattahoochee National Forest and to a falls known as Annie Ruby Falls, a very beautiful scenic spot. Presently there is no access to the road except for the most rugged hikers. There are about 150,000 people who visit Unicoi State Park annually and we feel, and the Forest Service feels, that by the construction of this road we will not only make available extremely desirable recreational facilities for those who visit the park but that we will also make available to the general public a scene which must be seen to be appreciated and that the general public cannot see presently.

In support of that, as briefly as I can, I want to state that last Friday I went down to Atlanta, Ga., and visited the regional office and talked to Mr. J. K. Vessey, the regional forester in that division.

Subsequent to that visit Mr. Vessey wrote me this letter under date of June 23, 1958, and before I go to the letter, I would like to say this: I have discussed it with members of the Forest Service in Washington, including Mr. McCardle and others in the Department. They favor it but they do not feel that they can recommend themselves a supplemental appropriation because they do not want to get the thing complicated with the Bureau of the Budget.

So, Mr. Vessey has written me this letter which I would like to read because there are certain points I want to emphasize.

DEAR MR. LANDRUM: This letter is sent in response to your request made last Friday when we visited in my office.

The suggested recreation road leading from Unicoi State Park over national forest land to the vicinity of the Annie Ruby Falls on the Chattahoochee National Forest is without a doubt a worthwhile and desirable project. The falls and surrounding environment are a recognized scenic and inspirational feature which could and should be made accessible to the many people who seek outdoor recreation in that area. Approximately 140,000 visits are made to the Unicoi State Park each year, and it is logical to assume that most of these people, plus many others who would be attracted to the area, could enjoy this feature if made accessible. The opportunities for picnicking developments adjacent to the proposed road and at the terminal parking area would expand the present usefulness of the established State park.

As you know, the construction of this road presents a difficult and costly engineering problem. The protection of the terrain from erosion and disfigurement

and the protection of the closely adjacent Smith Creek present special considerations and problems * * *.

That is the principal reason for the delay in my getting to the committee with this request.

We have to reengineer some of the original funds.

The Forest Service has completed a detailed survey of the proposed road location and has prepared cost estimates. In response to your particular desire for estimates of the cost of a road at this location, I am making our information available to you.

Our studies indicate that a contract to build the road alone would involve approximately $136,000. The construction of trails, trail bridges, minimum facilities adjacent to the falls area, and enginering overhead is estimated to cost an additional $32,000. Based on anticipated use, it is certain that the road would have to be surfaced and blacktopped at an additional cost of approximately $30,000.

It is our understanding that the State of Georgia will assume the responsibility for surfacing, blacktopping and maintaining the road, if and when the Forest Service can assume the responsibility for construction. Accordingly, this project would require approximately $168,000 of Forest Service appropriated funds.

As I advised you last Friday, because of current commitments and needs for timber access roads and programed construction of other high-priority, all-purpose roads in this Forest Service region, we will not be able to consider the construction of the Annie Ruby Falls road in the immediate future from current or presently anticipated appropriated funds.

The letter is signed by J. K. Vessey, regional forester.

I do not know anything that I can say to support the request which would be any stronger than that letter from Mr. Vessey, except to add that all of the citizens now living who assisted our Forest Service officials in acquiring what is now Chattahoochee National Forest have beseiged me from time to time to have this project undertaken. It was at their request that I did it. I have visited the falls on foot, which is the only way that you can get to it. I have a beautiful picture of it in my office which I would like to show you gentlemen, if you have the time to come by sometime, and if your committee can see fit to include this request from me into the supplemental, I certainly will undertake in every possible way to justify your action on the floor of the House.

Thank you.

Mr. KIRWAN. Congressman, the Forest Service has at its disposal over $34 million in 1959. That is for forest roads and trails under the Federal Aid Highway Act and is used for providing essential access to the national forests.

Mr. LANDRUM. That is one of the restraints.

Mr. KIRWAN. I would suggest that you obtain a letter from the Forest Service as to the necessity for this road and whether it is eligible for construction under that appropriation.

Mr. LANDRUM. Certainly.

Mr. KIRWAN. There may be something then that this committee could do about it. There is nothing that can be done unless access is necessary to the timber there.

Mr. LANDRUM. That will not be a difficult matter. It will be just a matter of getting a letter up here. There are thousands and thousands of feet of timber there.

Mr. KIRWAN. It is not only a question of building a road for recreation to see a part of grand America, but also for access to the timber that is in there for forest management purposes.

Mr. LANDRUM. Thank you, Mr. Chairman.

RESEARCH ON EFFECTS OF INSECTICIDES

WITNESS

DANIEL A. POOLE, WILDLIFE MANAGEMENT INSTITUTE

Mr. KIRWAN. Mr. Poole, we will be glad to hear from you.

Mr. POOLE. Mr. Chairman, I am Daniel A. Poole, editor of the Outdoor News Bulletin, a conservation news service of the Wildlife Management Institute. The institute is one of the older national conservation organizations, and its program has been continuous since 1911.

Dr. Ira N. Gabrielson, president of the institute, was unable to be here today, and he asked me to convey his regrets to the committee. Dr. Gabrielson further asked me to express his gratitude to the committee for the opportunity to comment on a matter which is of the utmost concern to conservation leaders and sportsmen throughout the Nation.

Senator Ralph W. Yarborough, of Texas, proposed an amendment to the Interior appropriations bill on the Senate floor to obtain $300,000 for research into the effects on fish and game of insecticides, pesticides, and similar chemical compounds used for control of undesirable insects and plants. Although Committee Chairman Carl Hayden objected to amendment of the appropriations bill on the Senate floor, he assured the Senator from Texas that the matter would be taken up when the supplemental appropriations bill was considered.

The statement made by Senator Yarborough and the response of Senator Hayden appear on pages 6928–6929 of the Congressional Record, April 30, 1958. The colloquy reveals the grave national concern over the destructive impact on fish and game resources of the millions of pounds of toxic chemicals that are being used in the United States annually.

This concern also is recorded in Senate Report No. 1592 on S. 2447, a measure that would—

> authorize and direct the Secretary of the Interior to undertake continuing studies of the effects of insecticides, herbicides, and fungicides on fish and wildlife for the purpose of preventing losses of those invaluable natural resources following spraying * * *.

That report and the printed record of the hearing on S. 2447 before the Senate Committee on Interstate and Foreign Commerce document serious loss of aquatic life, birds, and other animals following some of the large-scale controls programs that have been conducted.

S. 2447, which recently passed the Senate, and a companion measure, H. R. 783, will be the subject of a hearing before a subcommittee of the Committee on Merchant Marine and Fisheries tomorrow morning, June 25. Under Secretary of the Interior Hatfield Chilson submitted a strong statement in support of S. 2447 to the Senate committee and asked that the proposed budgetary limitation of $280,000 yearly be removed because a larger appropriation might be needed in the future. This was done by the Senate committee.

On the strength of the remarks made by the chairman of the Senate Appropriations Committee on April 30, and responsive to his further inquiry concerning the Department's needs for funds for research into

this important matter, the institute understands that Interior Secretary Fred Seaton instructed his staff to prepare a supplemental budget request for forwarding to the Bureau of the Budget. Oddly, and in face of the earlier strong supporting position taken by the Interior Department on S. 2447, the Budget Bureau rejected the Department's request for supplemental funds to get that much-needed research program underway promptly in the coming fiscal year.

I will not attempt to detail the destruction of fish and game that has occurred following the application of insecticides and other chemical control agents over large areas of forest and croplands. The record is complete—with one major exception—and now is a matter of public information in the printed hearings on S. 2447 and the subsequent unanimous committee report on that bill. The single exception involves a recent report of the Bureau of Sport Fisheries and Wildlife covering the observations of its field biologists and cooperators of the kill of fish and game following control operations for the imported fire ant in Southern States. That report, dated May 25, shows the seriousness of the situation and the potential magnitude of that large-scale program on fish and wildlife populations. The report also is important in that it shows the fallacy of using lethal poisons for control operations without sufficient knowledge or experience in the use of those powerful chemicals under field conditions. A copy of the May 25 report is appended for the committee's use.

The poisons that are being used in the fire-ant control program are heptachlor and dieldrin. Both are known to be at least 15 times more toxic than DDT to wildlife and fish under laboratory conditions. Those chemicals, which are members of the chlorinated hydrocarbon group, remain toxic in the soil for at least 3 years. They are nonselective in that they kill beneficial animals, insects, and soil organisms as well as the insect pest whose control is sought.

Available information shows that the use of insecticides and other chemical control agents in agriculture and forestry will increase markedly within the next few years. More powerful poisons are being developed. This means, of course, that without sufficient research data on which to base recommendations, the Federal and State agencies that sponsor and direct the insect and plant pest-control operations will be forced to continue their programs on a trial-and-error basis. Wildlife will suffer unless there is fundamental information obtained on the formulations, doses, methods, and times for the application and use of the chemical controls. The little laboratory work that has been done with some of the new super poisons, like dieldrin, shows that the pesticides can have a long-term effect on animals that survive exposure. Reproduction is inhibited and the few offspring that are produced are weak and of inferior quality.

Conservationists urge this committee to include $300,000 in the supplemental appropriations bill for this urgently needed research work. The figures introduced by Senator Yarborough, show that $240,000 could be used for wildlife research and $60,000 for fishery research under the item of "Management and investigations of resources," Bureau of Sport Fisheries and Wildlife. It is believed that this modest investment in a fundamental research program will be many times repaid in the benefits that should accrue.

Mr. Poole. Thank you, Mr. Chairman.

Mr. Kirwan. We appreciate your appearing before us.

WITNESS

LOUIS S. CLAPPER, NATIONAL WILDLIFE FEDERATION

Mr. KIRWAN. Mr. Clapper, I believe you wish to make a statement on the same problem. You may proceed.

Mr. CLAPPER. Mr. Chairman and members of the committee, I represent the National Wildlife Federation, a private nonprofit organization of some 2 million individual sportsmen-conservationists and affiliates in 50 States and Territories.

The National Wildlife Federation, in annual convention at St. Louis, Mo., earlier this year adopted a resolution relating to pesticides which, in part, reads:

> The National Wildlife Federation urges the Congress of the United States to enact authorizing legislation and provide the necessary appropriations for, and the executive agencies to undertake, adequate and realistic programs to determine the effects of such chemicals and safe rates and methods of applications, and recommends that no large-scale eradication program be initiated by any Federal agency prior to the completion of such research program.

Also in annual convention, the National Wildlife Federation listed pesticide research as 1 of the 6 foremost current legislative needs in the conservation field.

Before proceeding further, Mr. Chairman, it should be made clear that we do not oppose chemical controls of destructive and harmful insects and weeds, providing attendant losses of fish and wildlife and other resources are not unreasonable. We do, however, believe that eradication programs should be predicated upon a sound and complete scientific knowledge of other effects of chemical controls. It is for this reason that we appear here today to urge the Bureau of Sport Fisheries and Wildlife, United States Fish and Wildlife Service, Department of the Interior, be granted supplemental funds for research into the effects of pesticides and herbicides.

It may be relevant to point out that the Senate just recently passed a measure, S. 2447, which would authorize and direct the Fish and Wildlife Service to conduct such research. The measure, as originally introduced, would have granted $280,000 annually for this purpose. The allocation, however, was stricken out in committee because it was felt a greater amount may be required during certain years. This measure now is under consideration by the House Committee on Merchant Marine and Fisheries.

Insect pests, plant diseases, and weeds exact in the United States an annual toll estimated at $11 billion. To combat these tremendous losses, some $2 billion are spent annually on control measures. More than 750 million pounds of pesticides, valued at $250 million, now are produced in the United States each year and the chemical industry estimates it is supplying only one-sixth of present needs. There now are some 220 control agents on the market and more are appearing almost daily.

Present levels of research are inadequate to screen these materials and learn their immediate and long-term effects upon fish and wildlife. An expanded twofold program is needed to cope with the problem: (1) determinations of acute and chronic toxicity levels and

effects upon reproductive capacity of the various chemicals; and (2) field appraisal of wide-scale applications with the view of reducing damage through changes in materials, rates, methods, and times of treatment.

Reports reaching the National Wildlife Federation indicate losses of wildlife have been heavy in some areas where DDT, heptachlor, and dieldrin were applied to control the gypsy moth and fire ant. In fact, residents of Long Island, N. Y., went to court to seek stoppage of a DDT control program, claiming damage to fish and wildlife, beneficial insects and human populations through contamination of milk.

These are known, immediate losses. Only additional research can develop information on what long-range effects will be to wildlife, entire biological communities and human populations. Potential dangers are evident in that some of the chemicals are expected to have periods of residual effectiveness as high as 7 years. Scope of the problem is indicated in the fact that approximately one-third of Alabama's land area is to be treated for fire ant control in the next 10 years.

Congress already has appropriated large sums for pest control. The fire ant program alone will receive $2,400,000 next year. It does not appear unreasonable a minimimum of $300,000 should be appropriated to the Department of the Interior, United States Fish and Wildlife Service, for research into the pesticide and herbicide problem and the committee is respectfully urged to consider granting this overall amount. Of the $300,000, an estimated $240,000 is needed for wildlife research and $60,000 for fisheries research. Overall amounts of even $330,000 or $350,000 could be utilized to good advantage.

In closing, the National Wildlife Federation reiterates its position of believing that Congress should demand full knowledge, based upon exhaustive research, of all possible effects of pesticides and herbicides before extensive control programs are initiated in the future. These data should be made available to the public.

Thank you, Mr. Chairman, for the opportunity of appearing before your committee.

Mr. KIRWAN. Thank you.

GEORGE WASHINGTON MEMORIAL PARKWAY

WITNESSES

WILLIAM O. TUFTS, BROAD CREEK CITIZENS ASSOCIATION
IRVING B. YOCHELSON

Mr. KIRWAN. We have representatives of the Broad Creek Citizens Association before us. You may proceed, Mr. Tufts.

Mr. TUFTS. The Broad Creek Citizens Association, Inc., is opposed to the George Washington Memorial Parkway in Prince Georges County on the grounds that:

1. It is a luxury item which has no practical purpose, while other more vital and necessary highway work in the same area is held up.

2. Much of the riverfront property is in private hands and has been for many years. To buy, condemn, or otherwise secure this

property for the proposed parkway removes from the tax rolls just that much acreage, and from the tax income just that much revenue.

3. The National Capital Park and Planning Commission and its representatives have not acted in the best interests of the public. Our association has been in constant touch with this agency, has had speakers from it at our meetings, and has tried to be cooperative. We worked with the Maryland National Capital Park and Planning Commission in connection with the recent extension of zoning control into our area. In regard to this matter of the George Washington Memorial Parkway, we were promised that we would be notified directly in advance of any hearings relating to it. We were not so notified, and despite the fact that many of our members were watching for the public announcement of such hearings, those held on July 11 and 12, 1957, by the Committee on Interior and Insular Affairs of the United States Senate, when this matter was reviewed for further action, we were unrepresented. As a result, approval of the general plan was secured. Whether this failure to notify us was inadvertent or otherwise, only the officials concerned could say. We did not know of it until I secured recently from Senator Beall's office a copy of those hearings.

Of late there has been increased activity in our area by the Park and Planning Commission and its representatives. They have been running surveys across our properties without asking permission. When approached by residents inquiring as to what they were doing, their replies have been anything from "running a line" to "It's none of your business." And this is not new; 20 years or so ago a neighbor, now deceased, challenged surveyors when his property was entered, on more or less the same business. Another neighbor lost the sale of a lot within the last couple of months when the prospective buyer was told by the Park and Planning Commission's office, "Yes, you can buy it if you want to, but we'll take it away from you before long." Another neighbor, within the last few years, built a new home on a desirable lot overlooking the river. Only recently they were told that they face loss of the entire property.

Gentlemen, as I said at the beginning, we of the Broad Creek Citizens Association, Inc., do not want this parkway at all. But if it must come, there is still undeveloped property within a few hundred yards of the proposed parkway which would be much more economical; and there is also Government-owned property in the nearby area which might be utilized. Also, the present Fort Washington Road is nearby. Why should property owners who purchased riverfront property 30 or more years ago now be confronted with loss of that frontage because planners have not availed themselves of the most feasible and economical location?

In conclusion:

1. Property values have increased greatly since this project was first conceived, making the costly acquisition of riverfront property prohibitive.

2. Fort Washington, the southern terminus for the parkway, is not sufficient justification for costly acquisition of the waterfront purely from an esthetic viewpoint.

3. There is already a good road, with modification, to Fort Washington.

4. There is other highway work of much more pressing need and direct practical value to the area concerned.

5. The Park and Planning Commission has not, in our opinion, acted in good faith on this project. Knowing full well that the citizens most directly concerned were opposed to this parkway, they proceeded to the final plan stage without due notice of intent to the property owners, who had their property trespassed upon with no consideration for their rights as citizens. They were also kept in confusion and insulted.

We therefore ask that this parkway item be deleted from the appropriation now and at any future time it may be asked for.

Thank you.

ADEQUACY OF PRESENT ROADS

Mr. KIRWAN. How are the roads down there now?

Mr. TUFTS. The roads are good. The Indian Head Highway and the access roads from there over to the Riverview Road and Fort Washington and so on are good roads.

Mr. KIRWAN. Where would this road lead to?

Mr. TUFTS. It only leads to Fort Washington.

Mr. KIRWAN. You already have good roads going there?

Mr. TUFTS. We already have good roads going there.

Mr. KIRWAN. How many people are represented in your organization?

Mr. TUFTS. Our membership runs around 75 to 100.

Mr. KIRWAN. All property owners?

Mr. TUFTS. All property owners in the area concerned.

Mr. KIRWAN. I am glad to see you women here today. I want to say that I cannot understand why during the 15 years I have served on this committee that whenever a proposal for highway comes in here, or anything else, it is either for Thomas Jefferson or George Washington or Lou MacLew, but never for Betsy Ross, Molly Pitcher, Susan B. Anthony, Lucretia Mott, or Elizabeth Stanton.

Why do you women not raise a petition to get something named after one of the many great women in our history? I think you would get good results.

I am not kidding.

I tell you that everything around this city and 50 miles from this city is about some man, just as if we did not have women in the days when they were here.

That would be my advice to you, go get some women and raise a petition about that.

Perhaps then you can get some of the recognition that you deserve. They had some great women back in those days and I say you are discriminated against.

The committee will take your comments today on this project under consideration—and I mean under serious consideration—and we will give it plenty of thought.

Does anybody else wish to say a word?

STATEMENT OF IRVING B. YOCHELSON

Mr. YOCHELSON. My name is Irving B. Yochelson and I represent Mrs. Read.

I do want to say this: I think that the chairman has expressed the views of the group admirably, but I do think, however, that it might be well to express that the planned appropriation which I understand is $2 million or thereabouts, would be grossly inadequate because I feel that those who are seeking to acquire this land have no real present-day idea of what this land is worth. I can tell you that just 1 acre of land that is involved in this taking is the land of Mrs. Read. That land was improved about 2 years ago and the land and its improvements represent the life savings of the Reads and possibly a $75,000 investment. All of the land down there is selling for very high prices and prices of $8,000 to $10,000 a half acre are common, because this is an ideal location.

It is close to the city of Washington, close to the waterfront, and I feel that those who seek this land should really find out what the prices are that are now prevalent.

If so, this $2 million will not be a drop in the bucket and I think the committee would be well advised to make certain that the $2 million is going to cover it.

I am sure it will not and I want to reiterate the sentiment expressed by the chairman. We feel it is an economic mistake to go ahead with this project.

Mr. KIRWAN. Thank you.

Mr. FENTON. You say you were not invited to testify when the Committee on Interior and Insular Affairs of the Senate had their hearings?

Mr. YOCHELSON. That is correct. I did not know anything about it until I got a copy of that from Senator Beall's office.

Mr. FENTON. You have not had the opportunity to testify?

Mr. TUFTS. No, sir.

Mr. FENTON. As far as either Legislative Committee of the House or Senate is concerned?

Mr. TUFTS. No, sir.

As I pointed out, despite the fact that the Park and Planning Commission told us they would notify us of those hearings, they did not do so.

Mr. KIRWAN. Off the record.

(Discussion off the record.)

Mr. KIRWAN. We have enjoyed having you here and thank you, all of you.

Mr. TUFTS. Thank you sir.

SUBCOMMITTEE ON DEPARTMENTS OF STATE AND JUSTICE AND THE JUDICIARY AND RELATED AGENCIES APPROPRIATIONS

JOHN J. ROONEY, New York, Chairman

PRINCE H. PRESTON, Georgia
ROBERT L. F. SIKES, Florida
DON MAGNUSON, Washington
FREDERICK R. COUDERT, Jr., New York
FRANK T. BOW, Ohio
CLIFF CLEVENGER, Ohio

FRIDAY, JUNE 20, 1958.

DEPARTMENT OF JUSTICE

SALARIES AND EXPENSES, GENERAL LEGAL ACTIVITIES

WITNESSES

MALCOLM ANDERSON, ASSISTANT ATTORNEY GENERAL
DONALD C. BUSH, ADMINISTRATIVE OFFICER
S. A. ANDRETTA, ADMINISTRATIVE ASSISTANT ATTORNEY GENERAL
E. R. BUTTS, BUDGET OFFICER

Mr. ROONEY. The committee will please now come to order.

This morning we shall commence consideration of certain supplemental appropriations requests contained in House Document No. 394.

DRIVE AGAINST ORGANIZED CRIME

We shall first direct our attention to three items which concern the Department of Justice, the first of which appears at page 21 of House Document No. 394 and is a request for the amount of $200,000 additional under the title "Legal Activities and General Administration, Salaries and Expenses, General Legal Activities."

We shall at this point in the record insert pages 2 through 5, which comprise the entire justifications for this item.

(The material referred to follows:)

Salaries and expenses, general legal activities

Amendments to 1959 estimate, Criminal Division

Request (for 12 months from July 1, 1958–June 30, 1959)	$200,000
Appropriation to date (1959 pending)	11,350,000
Obligations to April 30 (1958)	9,145,679
Expenditures to April 30 (1958)	7,803,620
Budget estimate next fiscal year	11,350,000
Employees:	
Average number current appropriation (1958)	1,244
Number involved this amendment	16
Actual employment April 30 (1958)	1,219

PURPOSE AND NEED FOR AMENDMENT TO 1959 ESTIMATE

Amount requested

This amendment reflects the need for $200,000 in addition to the $11,350,000 estimate pending before the Congress for the fiscal year 1959. The request includes $134,000 for personal services and $66,000 for related expenses.

Purpose

This request will provide funds to organize a special group to supplement the Organized Crime and Racketeering Section of the Criminal Division in order to implement a drive on organized crime which is rampant and with which local communities have been unable to cope.

General statement

Recent developments indicate that hoodlums have taken advantage of modern communication and transportation facilities to expand and coordinate their activities. Their so-called board of directors has recently been ironing out jurisdictional and operational problems. This activity must be met by a greater and more vigorous drive by all law-enforcement agencies. Day by day the public and local law-enforcement officials are looking to the Department of Justice to provide a plan and the leadership in a vigorous campaign against hoodlumism.

Broad plans have been evolved to meet this challenge, the first of which is a long-range program to develop and expand all activities of the Organized Crime and Racketeering Section in the Criminal Division. Hoodlums have been able to survive the bursts of local law-enforcement enthusiasm and no doubt could survive a nationwide drive for a short period of time. The Department feels that a program of this type should be considered on at least a 20-year basis. Such a program will require capable young attorneys who have had trial and grand-jury experience. The staff will be expanded as experience is gained. These attorneys will act principally as coordinators of information from all investigative agencies, both Federal and State. They would constitute a mobile force in the field but with headquarters in Washington. These plans are not new in concept, but are much broader and more detailed than previously provided.

Since a 20-year plan probably would not have the desired effect immediately, it is proposed to engraft upon the overall plan a temporary one (on a 2- or 3-year basis) that will strike immediately at the chief racketeers. This temporary plan, generally would entail special task forces consisting of experienced lawyers who are willing to fight against organized crime together with supporting personnel but not as career employees, as will the personnel in the long-range plan. These task forces will be assigned to the major metropolitan areas; in addition, coordination of all available Federal forces will be necessary, in order to strike against a few of the top hoodlums and racketeers of this Nation.

The present authorized permanent staff of the Organized Crime and Racketeering Section is composed of 16 attorneys and 5 clerical positions. Funds requested in this amendment will provide for a special staff of 11 attorneys and 5 clerks on an annual basis for fiscal year 1959. Sufficient balances due to understaffing were available to employ personnel (9 attorneys and 5 clerks) for May and June (generally) of the current fiscal year. These appointments were made on a temporary basis until June 30, 1958, and cannot be extended unless additional funds are provided. Total annual salaries of this group amounts to $108,570.

The per capita travel of attorneys in this section for fiscal 1957 was approximately $425. Due to this type enforcement program it is estimated the cost in 1959 will be at least $1,000 per attorney. It is assumed, many of the attorneys will remain in the field for weeks at a time thus creating heavy per diem expenses. This estimate provides travel funds for 11 new attorney positions at $1,000 each, also allowance of $575 each for 16 other attorney positions considered part of the permanent staff.

Due to increased activities of this section additional funds will be needed for communication services. Grand-jury investigations will be held requiring many weeks of testimony and the resulting reporting costs after indictments are obtained: in addition, funds will be required for the printing of briefs and records.

Office supplies are projected on the basis of $50 per employee, office equipment for attorneys $350, and clerical personnel $400. The remaining increases are of a mandatory nature.

Mr. ROONEY. Mr. Attorney General, what is the purpose of this request?

Mr. ANDERSON. Mr. Chairman, we are asking for the additional $200,000 in the Criminal Division budget in order to have additional manpower to carry out the planned fight against organized crime.

This plan was developing before I came to the Department of Justice in March of 1958, and from there on I took part in its development.

Briefly, we had come to the conclusion that although general crime is increasing all over the Nation, organized crime was one of the most serious phases of this growth. Most of the responsibility for prosecution is with the State and local law-enforcement agencies. However, we felt that because of increased communication facilities the top hoodlums were getting a little too difficult to handle locally and that we should concentrate and emphasize our work in this area more than we had in the past.

In examining this we decided that a short-range drive was the type of effort that they could survive and had been surviving in various areas. They would just hibernate and wait until the drive was over and then come back. So we felt there should be built into the Department of Justice, and particularly in the Organized Crime and Racketeering Section of the Criminal Division, a plan to fight the top racketeers and bring them to justice.

After this was determined, it was felt we also needed a plan for an immediate effect upon the racketeers. This was the place where our thinking turned toward development of a special group. This is a temporary plan in which we are using noncareer employees for a period of 2 or 3 years. We have developed specific areas for each of the two groups. The special group, which is now under way, is stationed in New York and studying all the records and reports that we can obtain from the various investigative agencies of the Federal Government and the cooperating State law-enforcement agencies. We hope by putting all this information together we can come up with some new method of attacking these top hoodlums. This is expected to be without tangible results for a period of from 12 to 18 months—tangible in the sense of indictments or complaints.

In the meantime, the Organized Crime and Racketeering Section has had additional men assigned to it who are working with the United States attorneys and cooperating with the investigative agencies along present existing lines. In addition, considerably more emphasis has been placed on exchanging information and helping and directing the United States attorneys in bringing actions against top hoodlums.

For these reasons, we need additional men in the Organized Crime and Racketeering Section, and, of course, we need the men of the special unit.

Mr. Rooney. Are we to understand that this matter of fighting top racketeers and bringing them to justice is something newly conceived and newly developed? I have been under the impression that this was always an activity of the Department of Justice, and particularly of the Criminal Division, since I have been on this committee, which is 14 years.

Mr. Anderson. You are right. This is merely an increase in emphasis.

Mr. Rooney. I was given the impression when the Attorney General released his organized crime statement some months ago, that that was just a good publicity stunt. I did not think he would want more money. I knew he was against crime before he issued the statement, as I think we all are.

Mr. Anderson. That is true.

Mr. ROONEY. This same situation existed at the time the Department of Justice was here previously for their regular appropriation for 1959 fiscal year. Is that true, Mr. Andretta?

Mr. ANDRETTA. Yes, sir.

Mr. ROONEY. How long has this matter of top hoodlums and racketeers existed? There is nothing new about this; is there?

Mr. ANDERSON. Yes, there is something new about the awareness of their being organized.

Mr. ROONEY. Since when have you had that awareness?

Mr. ANDERSON. Since the Apalachin meeting. That was one thing.

Mr. ROONEY. Are we to understand that the Department of Justice did not know there was such a thing as organized crime before the Apalachin meeting?

Mr. ANDERSON. I did not say that, sir. Of course, we knew there was such a thing as organized crime. This was an increased awareness.

Mr. ROONEY. Yes, and the publicity of the Attorney General on the heels of that meeting was very, very good publicity, but I thought that it was just good publicity, his statement that he was against organized crime.

REDUCTION IN CRIMINAL DIVISION

Mr. ANDRETTA. Mr. Chairman, you know for 4 years the Criminal Division has been cutting staff and going downhill.

Mr. ROONEY. But you transferred the civil-rights and internal-security functions out of it.

Mr. ANDRETTA. This is a new concentrated drive. The Criminal Division as it was cut down did not have the men to put on this concerted drive.

Mr. ROONEY. Has there been any cut in the Criminal Division other than the transfers to the new Civil Rights and Internal Security Divisions?

Mr. ANDRETTA. Yes, sir.

Mr. ROONEY. Where?

Mr. ANDRETTA. I can show you that through the years we have been cutting down on the Criminal Division.

Mr. ROONEY. What do you mean, your allocation of funds?

Mr. ANDRETTA. Yes.

Mr. ROONEY. Has Congress cut down on the funds for the Criminal Division or was that the result of your allocation of the bulk funds?

Mr. ANDRETTA. Mostly our allocation of money in the Department. With the emphasis being on the United States attorney's office and delegating more work to the field, we were cutting down the activity in the Criminal Division; and when we pulled the civil-rights functions and the internal-security functions out of the Division there was a further reduction in the Criminal Division and there were less funds for other activities.

Mr. ROONEY. Would it be fair to say this would be a means of keeping people on the rolls even though we now have a new Assistant Attorney General and a separate division with regard to civil rights and a new Assistant Attorney General and a separate division with regard to internal security? You still want to keep the Criminal Division at top level?

Mr. ANDERSON. If I may answer that, I would like to say Mr. Andretta is not directly responsible for the request. When you ask what is the motive, I think probably the motive came from me and from Judge Walsh. We felt that this was needed, not to keep people on the payroll, but to fight organized crime and to put increased emphasis on fighting organized crime.

Mr. ROONEY. What have you been doing—when I say "you" I address you and all those who surround you—what have you been doing in regard to this organized-crime business in the last 5 years, if anything?

Mr. ANDERSON. The Organized Crime and Racketeering Section was organized during Mr. Olney's time before I came to Washington. Prior to that such matters were handled in other sections in the Criminal Division. We have certain statutes which permitted us to get at organized crime—the narcotics statutes and the internal-revenue or income-tax-evasion statutes.

Mr. ROONEY. They have been on the statute books for some time.

Mr. ANDERSON. Yes; and they are very effective. We are increasing the emphasis. There has always been a fight against organized crime. This is an increase in the emphasis on it.

Mr. ROONEY. If there has always been a fight against organized crime, why was not this proposition submitted during the course of the regular budget hearings for the Criminal Division?

Mr. ANDERSON. I think because I was not in Washington at the time. My thinking on the matter partially caused the creation of the increased emphasis.

Mr. ROONEY. Is this increased activity expected to lead to Federal indictments?

Mr. ANDERSON. Well, of course that is one of the results we hope to achieve. We also expect to furnish certain information to State officials that will aid them.

Mr. ROONEY. Do you not have such a system of cooperation at the present time and has that not been in existence for a number of years?

Mr. ANDERSON. Yes, sir. This, as I say, is an increase in emphasis on it.

Mr. ROONEY. And does not the FBI have liaison with all those local law-enforcement agencies?

Mr. ANDERSON. Yes.

Mr. ROONEY. And has that not been in existence over the years?

Mr. ANDERSON. Yes; they have very good liaison with local law-enforcement agencies. The Narcotics Bureau also has excellent liaison with local law-enforcement agencies.

Mr. ROONEY. You can see, Mr. Attorney General, that I have a suspicion that this is sort of a "drop the gun louie" activity and is not so much based on effectively securing Federal indictments. There is a very attractive title to this item. Would you care to develop that?

Mr. ANDERSON. I can assure you it is not a publicity gimmick. We are serious about it. But in any fight against organized crime I think some publicity is needed in order to give impetus to the program.

Mr. ROONEY. It was splendid publicity. The Attorney General was against organized crime and he was really going to do something about it. I had thought everybody in the Department of Justice since

the year 1 was against organized crime and that they were doing something about it.

Mr. ANDERSON. That is right. This is an increased emphasis on it.

USE OF NONCAREER PEOPLE PLANNED

Mr. ROONEY. These people you want to add to the payroll will not be career people, will they?

Mr. ANDERSON. Not as a group; no. Some of them may.

Mr. ROONEY. Where will you get these people?

Mr. ANDERSON. Most of them are former assistant United States attorneys. Several of the men came over from the honor program.

Mr. ROONEY. Will they be of one political persuasion and recommended by a political patronage committee?

Mr. ANDERSON. None of them have any political sponsors; and as to their political affiliation; I can honestly say I do not know to what party they belong.

PERSONNEL EMPLOYED AND ACTIVITIES TO DATE

Mr. ROONEY. You have not recruited any yet, have you?

Mr. ANDERSON. We have recruited some.

Mr. ROONEY. How many?

Mr. ANDERSON. In the special group now there are 9 attorneys and 5 civil-service clerks.

Mr. ROONEY. Where did you get the nine attorneys?

Mr. ANDERSON. You mean financially?

Mr. ROONEY. Yes; first financially.

Mr. ANDERSON. When I came to the Division in March it was at its lowest ebb as far as personnel was concerned that it had been for years.

Mr. ROONEY. Well, my gosh, the Attorney General had just moved out the internal-security outfit, creating a big new division with an additional Assistant Attorney General at its head, and we had moved out the civil-rights outfit and set it up as a new division with another additional Assistant Attorney General at its head.

Mr. ANDERSON. But even so, adjusting those figures, it was still lower than it had ever been because the Acting Attorney General had not been employing any people to take care of the natural attrition of resignations and retirements. Also, there had not been any Assistant Attorney General or First Assistant for the Division. Those are two top positions and they had not been filled for some months. That left us with a credit balance and we used that and are using it to employ this special group. They understand our activities could come to a sudden end at the end of this fiscal year.

Mr. ROONEY. What do you mean by that?

Mr. ANDERSON. If we did not get the additional funds.

Mr. ROONEY. You mean these people would have to leave the payroll because the Criminal Division has been contracted by reason of the new Internal Security Division and the new Civil Rights Division?

Mr. ANDERSON. That contraction is not the contraction I am talking about. Over and above that there had been an attrition from

retirements and from resignations. I do not know the exact number.

Mr. ROONEY. Is that not the nicest way of reducing personnel in the Government without doing harm to individuals?

Mr. ANDERSON. Yes, if that is the desired end. We are not adding personnel with the idea of keeping any empire. Employees are added solely for this new emphasis on the fight against organized crime.

Mr. ROONEY. How long have you had these 9 attorneys and 5 civil-service clerks on the payroll?

Mr. ANDERSON. We started with one. Milton Wessel, the leader of this group, was hired in late March, and assigned to him shortly after that was one of the men from our Organized Crime and Racketeering Section. New additions have been made every 2 or 3 weeks since then.

Mr. ROONEY. And this has been going on how long?

Mr. ANDERSON. Since late March.

Mr. ROONEY. Going on 3 months?

Mr. ANDERSON. Yes.

Mr. ROONEY. What have they produced in 3 months?

Mr. ANDERSON. They have not produced anything so far as indictments or informations are concerned. They have been studying and examining reports in order to develop cases.

Mr. ROONEY. Are they all working here in Washington?

Mr. ANDERSON. No, sir. They are working in New York with occasional trips back to Washington although Mr. Wessel did work in Washington for his first 2 months.

Mr. ROONEY. How many people do you have in New York on the staff of the United States Attorney?

Mr. ANDERSON. I think about 55 attorneys.

Mr. ANDRETTA. About 100 people.

SALARIES OF PERSONNEL REQUESTED

Mr. ROONEY. What grades and salaries do you proposes with regard to these requested 16 positions?

Mr. ANDERSON. Well, we can tell you at what salary they started. If that is not acceptable, we will adjust it.

That is shown starting at the bottom of page 13 and going to page 14.

Mr. ROONEY. Do these salaries call for a $1,500 increase under the recent pay raise legislation?

Mr. ANDERSON. I am advised they are not included under the new pay raise act.

Mr. ANDRETTA. Mr. Chairman, that would be a limitation.

Mr. ROONEY. You would have four so-called special assistants who would not be career people at $15,000 apiece, right?

Mr. ANDERSON. Yes, sir.

Mr. ROONEY. And then two at $10,500 apiece?

Mr. ANDERSON. Two special attorneys. The title changes.

Mr. ROONEY. And one at $8,000?

Mr. ANDERSON. Yes.

Mr. ROONEY. And two at $7,500 apiece?

Mr. ANDERSON. Yes.

Mr. ROONEY. And one at $7,000?

Mr. ANDERSON. Yes.

Mr. ROONEY. And one at $6,390?

Mr. ANDERSON. Yes. That is one that corresponds to a GS rating because he is temporarily assigned from the Organized Crime and Racketeering Section.

Mr. ROONEY. That would be a total of 11, right?

Mr. ANDERSON. Yes, sir.

Mr. ROONEY. And 2 GS–4 civil-service clerks, and 3 GS–6's, for a total of 16; is that correct?

Mr. ANDERSON. Yes, sir.

EXPENSES OTHER THAN FOR SALARIES

Mr. ROONEY. Where are the "Other objects"?

Mr. BUTTS. Pages 7 and 8, Mr. Chairman.

Mr. ROONEY. Then you are also asking for $20,200 for travel of these noncareer people?

Mr. ANDERSON. Yes, sir.

Mr. ROONEY. $2,000 for communication services; and $7,500 for printing and reproduction; and $25,700 for other contractual services?

Mr. ANDERSON. That is right.

Mr. ROONEY. What sort of an item is that, "Other contractual services"?

Mr. ANDERSON. Principally for transcripts of grand jury testimony.

Mr. ROONEY. What cases are you proposing to submit to the grand jury upon which you would base a request such as this? You might tell us that off the record if there are any.

Mr. ANDERSON. Do you mean specific cases?

Mr. ROONEY. Yes.

Mr. ANDERSON. Well, we have 100 or more—that is a round figure—of top hoodlums.

(Discussion off the record.)

PERSONNEL IN CRIMINAL DIVISION

Mr. ROONEY. How many people do you have in the Criminal Division at the moment?

Mr. ANDERSON. We have 165; 93 attorneys and 72 others.

Mr. ROONEY. How many did you have in the Criminal Division as of a year ago, Mr. Andretta, not counting the Civil Rights Section?

Mr. ANDERSON. If I may be of some help, I have a figure of 92 and 80 for June 1957, and I notice when we made the transfer we took 10 attorneys out and 8 clerks. If we subtract that, it would give us 82 and 72.

Mr. ANDRETTA. That is a year ago.

Mr. ANDERSON. That is a year ago, adjusted.

Mr. ROONEY. And under the provisions of the regular bill you set up a new Civil Rights Division with how many employees?

Mr. ANDRETTA. You mean that came out of the Criminal Division?

Mr. ANDERSON. We sent over 10 attorneys and 8 clerks. I do not know the authorized strength.

Mr. ANDRETTA. We were authorized 59; 39 lawyers.

ASSISTANT ATTORNEY GENERAL ANDERSON'S BIOGRAPHICAL DATA

Mr. ROONEY. Before we pass to the next item, Mr. Anderson, would you be so kind, since this is your first appearance before the committee

as Assistant Attorney General, as to give a brief résumé of your background for the record?

Mr. ANDERSON. Yes.

Immediately prior to my appointment as Assistant Attorney General, Criminal Division, I was United States attorney for the western district of Pennsylvania with offices at Pittsburgh, Pa. I came to the United States attorney's office in the summer of 1953 as first assistant to John W. McIlvaine, then the United States attorney. In 1955, the United States district court appointed me as United States attorney and in 1957 I received the Presidential appointment to the office.

I am a native Pennsylvanian and grew up in Donora, Pa., a small community in Washington County which is one of the counties included in the western district of Pennsylvania. In 1937, I received my degree from Penn State College and in 1940 I was graduated from the Law School of the University of Pittsburgh. In December of 1941 I became a pilot in the United States Air Force and was discharged in November of 1945. During the intervening years I practiced law in Donora in a firm which had been started by my father and was under the title of "Anderson & Anderson." In addition, I was part-time instructor of law at the University of Pittsburgh School of Law for 2 years and was an assistant district attorney for Washington County for 2 years before going to the United States Attorney's office.

Mr. ROONEY. Mr. Clevenger?

Mr. CLEVENGER. I have no questions.

Mr. ROONEY. Thank you, Mr. Attorney General and gentlemen.

FRIDAY, JUNE 20, 1958.

SALARIES AND EXPENSES, UNITED STATES ATTORNEYS AND MARSHALS

Mr. ROONEY. The next item is entitled "Salaries and Expenses, United States Attorneys and Marshals." This request also appears at page 21 of House Document No. 394, "For an additional amount, fiscal year 1958, for 'Salaries and expenses, United States attorneys and marshals,' not to exceed $100,000, to be derived by transfer from any appropriation available to the Department of Justice for the fiscal year 1958."

We shall at this point in the record insert page 20 of the justifications.

(The page referred to follows:)

Salaries and expenses, United States attorneys and marshals (supplemental estimate, 1958)

Request (for 2 days from June 29 through June 30, 1958)	$100,000
Obligations to April 30, 1958	16,934,161
Expenditures to April 30, 1958	16,041,101
Budget estimate next fiscal year	20,430,000
Employment:	
Average number current appropriation	2,597
Number involved this estimate	
Actual employment April 30, 1958	2,582

PURPOSE AND NEED FOR SUPPLEMENTAL FUNDS

Because of heavy litigation costs, for the most part uncontrollable, and an unforeseen cost under the Retirement Act, this appropriation will run short up to $100,000. So far we are $62,500 in the red (through April 30) and more will come in after the close of the fiscal year when the courts wind up their business for the summer. The deficit under the Retirement Act contributions is due to an underestimate of the cost when originally submitted to the Budget.

At that time, it was determined that all assistant United States attorneys would be subject to the 2¼-percent contribution (social security). Subsequently it was found that many assistants had previous Government service and would be covered by the 6½-percent Retirement Act contribution, therefore reflecting a deficit against the appropriation of 4¼ percent of their salary in each instance.

Mr. ROONEY. Mr. Andretta, why is this requested additional amount necessary?

Mr. ANDRETTA. Mr. Chairman, as you know, in this appropriation we invariably run short every year due to an area of expenditure which is completely uncontrollable as far as we are concerned having to do with litigative expenses.

Recognizing that problem, you will recall that we, with the Bureau of the Budget, considered several ways of handling it, such as an open-end appropriation, or a no-year appropriation, or a reserve fund that we would set up to take care of these unforeseen and uncontrollable expenditures.

This year, as usual, these expenditures have exceeded our estimate. We have $20,150,000 for these activities, and in setting up the allotments for this present fiscal year we divided the expenditures into so-called administrative expenses that are controllable—and, of course, the personal services allotment—and then we created a single allotment for litigative expenses which we maintain in Washington rather than making allotments to the various United States attorneys' and marshals' offices. It is in this area we are running a deficit to the extent now—from the latest figures we have—of $199,000, but we are offsetting against that a savings in personal services of $24,000 and a saving under administrative expenses which are controllable, of $35,000, so that means that there is a potential deficit of $138,000. And against that we will get some reimbursements of $11,000 plus, making the potential net deficit as of this time, according to our best estimate, $127,000 for the year.

Mr. Chairman, the area of expenditure that has gone overboard is primarily litigation expenses, such as the cost of printing records and briefs. They are up 15 percent over last year.

The compensation of commissioners appointed by the courts, for example, is running 17 percent ahead of last year. As you know, Mr. Chairman, we cannot control that. The court will appoint commissioners and then we have to pay whatever the court sets in the way of their fees. The same with special masters.

Then our other miscellaneous litigation costs are going up.

Another item in here that throws us over, because money has to be devoted to meet this mandatory expense, is the contribution to the Government retirement fund. When we estimated the money we thought most of the assistant United States attorneys, and some of the people in the marshals' offices would be subject to the Social Security Act rather than the Government Retirement Act.

Well, as it turns out, we have found many assistant United States attorneys, were eligible under the Government Retirement Act; therefore, our estimate for the Government's contribution ran short some $37,500.

Mr. ROONEY. No part of this requested appropriation to be derived by way of transfer is for personal services?

Mr. ANDRETTA. That is correct.

Mr. ROONEY. $23,000 is claimed to be needed for printing and reproduction; is that correct?

Mr. ANDRETTA. Yes.

Mr. ROONEY. $39,500 for other contractual services; is that correct?

Mr. ANDRETTA. Yes.

Mr. ROONEY. And grants, subsidies, contributions, $48,700. These three amounts, less $11,200 under taxes and assessments, would round out the net sum of $100,000; correct?

Mr. ANDRETTA. That is correct, sir.

Mr. ROONEY. Can you tell us with regard to this $100,000 how much is controllable and how much would be in what you categorize as the uncontrollable area?

Mr. ANDRETTA. It is all uncontrollable. As I pointed out, we are running a potential deficit in the uncontrollable items of $199,000, and with savings from personal services and administrative expenses which we can control, it means in the litigative area, plus reimbursements, we are going to be $127,000 over. That is the area where, with representatives of the Comptroller General's Office and also the Bureau of the Budget, we have been trying to attack this problem of how to handle these uncontrollable expenses and where they agree with us there is not much we can do to control it.

Mr. ROONEY. Hereafter, we wish that you set up in your justifications in connection with the annual bill a breakdown by way of litigation expense as compared to the other expenses.

Mr. ANDRETTA. Yes, sir.

Mr. ROONEY. Now, I assume this was not a deliberately brought about deficiency?

Mr. ANDRETTA. No, sir. This is indicated by the fact we have controlled our personal services. We have a balance in that. We have also controlled the administrative expenses.

Mr. ROONEY. What is the balance in personal services?

Mr. ANDRETTA. $24,874, and $35,724 in the administrative expenses now. Again, I do not want to be too repetitive about it, but the litigative expense has always been troublesome, and it is the one that throws us over. We have to apply whatever moneys we save in other areas to those expenses. I wish there were some way we could handle the thing better. We have been kicking it around for many years. Whether we ought to have a separate appropriation or not, I do not know.

Mr. ROONEY. Mr. Clevenger?

Mr. CLEVENGER. I have no questions.

FRIDAY, JUNE 20, 1958.

BUREAU OF PRISONS

WITNESSES

J. V. BENNETT, DIRECTOR
A. A. EVANS, ASSISTANT DIRECTOR
R. W. MEIER, BUDGET OFFICER
S. A. ANDRETTA, ADMINISTRATIVE ASSISTANT ATTORNEY
E. R. BUTTS, BUDGET OFFICER

Mr. ROONEY. The next item is for the Federal prison system, and it also appears on page 21 of House Document No. 394. It is a request under "Salaries and expenses, Bureau of Prisons," and it is "For an additional amount for 'Salaries and expenses, Bureau of Prisons,' $2,066,000."

It is indicated "This proposed supplemental appropriation is needed for the following items: (1) Reclassification of positions because of new standards issued by the Civil Service Commission applicable to correctional personnel and the transfer of positions in crafts and trades to the Wage Board system, $1,753,000; (2) an increase in estimated average prison population from 20,800 forecast in the 1959 budget, to 21,300 (actual population on May 8, 1958, was 21,582), $139,000; and (3) replacement of inventory depleted in the current fiscal year as the result of absorbing the cost of the higher average prison population than that financed in the 1958 budget and other unusual costs, including the expenses of a severe winter requiring abnormal quantities of fuel and other supplies, $174,000."

We shall at this point in the record insert pages 27 through 32 of the justifications.

(The pages referred to follow:)

Salaries and expenses, Bureau of Prisons, amendment to 1959 estimate

Request (for 12 months from July 1, 1958, through June 30, 1959)	$2,066,000
Appropriation requested to date	$33,000,000
Employment:	
Average number, current appropriation	4,201
Number involved this estimate	
Actual employment, April 30, 1958	4,222

PURPOSE AND NEED FOR ADDITIONAL FUNDS

Since submitting the original estimates for fiscal year 1959, it is evident that the amount requested will not be sufficient for the operation of the Federal prison system. This is the result of unusual circumstances not controllable by administrative action, an unanticipated increase in workload and consumption of supplies. This urgent need for additional funds is summarized as follows:

1. Personal services	$1,753,000
For reclassification of positions in fiscal year 1959 in compliance with the Classification Act of 1949.	
2. Custody, care, and treatment of prisoners	139,000
For increase of 500 in average daily population estimated for fiscal year 1959. Estimate revised from 20,800 to 21,300 at 76 cents per capita.	
3. Replacement of inventories	174,000
For replacement of supplies used to support the higher population and also that required as a result of the severe winter.	
Total	2,066,000

1. Personal services, $1,753,000

Funds requested in this estimate are required as the result of a study of the salary structure of the Federal Prison Service. As a consequence of the study a revision of civil service classification standards applicable to correctional personnel has been issued under publication date of December 1957 and the positions involving craft and trade type assignments have been transferred to the wage board system. The new standards have resulted in three major changes in the classification of correctional positions:

First: A total of 699 jobs involving supervision and control of prisoners in craft and trade-type assignments (such as carpenter, plumber, electrician, farm foreman, food service supervisor, powerplant engineer, etc.) are transferred to the wage board pay and classification system.

Second: Jobs in correctional institutions which have somewhat similar or related counterparts in other Federal agencies (such as storekeeping, clerical, administrative, etc.) will be allocated under subject matter classification standards published for governmentwide use with additional grade recognition for employees having responsibilities for security, guidance, and training of inmates.

Third: New classification standards applicable to positions found only in penal and correctional work (such as warden, associate warden, correctional supervisor, correctional officer, etc.) have been issued.

Specifically, the result of this study will necessitate additional funds as follows:

(1) Consistent with the provisions of section 202 (7) of the Classication Act of 1949, a total of 699 positions involving supervision of prisoners in trade and craft assignments are being converted to wage board pay category $496,995

(2) The revised classification standards provide for the recognition of the penological responsibilities of security, guidance, and training in positions at penal and correctional institutions. The 319 changes in the following groups of positions involve 190,760

	Number
From GS–11 to GS–12	23
From GS–10 to GS–12	7
From GS–10 to GS–11	16
From GS–9 to GS–12	1
From GS–9 to GS–11	45
From GS–9 to GS–10	5
From GS–8 to GS–11	6
From GS–8 to GS–10	1
From GS–8 to GS–9	3
From GS–7 to GS–9	69
From GS–7 to GS–8	10
From GS–6 to GS–8	9
From GS–6 to GS–7	70
From GS–5 to GS–7	36
From GS–5 to GS–6	4
From GS–4 to GS–5	13
From GS–3 to GS–4	1
Total	319

(3) The Civil Service Commission classification standards GS–007 have been revised to recognize the increased difficulty and responsibility of these positions and to more properly aline them gradewise with other similar positions subject to the Classification Act. The reclassification of this group of 2,750 positions will require 820,355

		Number
Wardens (17)	$12,820	
From GS–14 to GS–15		5
From GS–13 to GS–14		6
From GS–12 to GS–13		1
From GS–11 to GS–12		5
Associate wardens, correctional supervisors and officers (2,733)	$807,535	
From GS–13 to GS–14		6
From GS–12 to GS–14		2

	Number
From GS–12 to GS–13	15
From GS–11 to GS–13	10
From GS–11 to GS–12	4
From GS–10 to GS–12	1
From GS–10 to GS–11	5
From GS–9 to GS–12	1
From GS–9 to GS–10	11
From GS–8 to GS–10	45
From GS–8 to GS–9	105
From GS–7 to GS–8	5
From GS–6 to GS–8	90
From GS–6 to GS–7	1,179
From GS–5 to GS–6	1,254
Total	2,733

(4) Coincident with the salary and classification study, the classification, and parole departments were reorganized and the training program was strengthened. The reclassification of the 80 positions set out below will necessitate additional funds in the amount of $24,890

	Number
From GS–11 to GS–12	12
From GS–10 to GS–11	7
From GS–9 to GS–10	19
From GS–8 to GS–11	8
From GS–8 to GS–9	3
From GS–7 to GS–9	26
From GS–6 to GS–8	5
Total	80

(5) A total of 390 positions will remain in the same grade or wage category.

(6) The increases in regular salaries and wages for permanent positions will result in the following related increases in personnel costs .. 220,000

Night differential, holiday, overtime pay, etc	$115,000
Retirement fund and life-insurance contributions	105,000

The total additional amount required for purposes outlined above is .. 1,753,000

2. Custody, care, and treatment of prisoners, $139,000

It is evident that the forecast of an average prison population of 20,800 for fiscal year 1959 was much too low and it is now estimated that it will average at least 21,300 in fiscal year 1959. The population on May 29, 1958, was 21,632 an increase of 1,188 over the total a year ago. During the last 5 months commitments have exceeded those of the same period a year ago. Longer mandatory terms without eligibility for parole are involved in the narcotic sentences thus increasing the average population. Increased commitments for auto theft and immigration violations will also raise the average population in 1959. The difference between the original estimate of 20,800, made in May 1957, and 21,300 is 500 and this number, at the rate of 76 cents per man per day, will require an additional $139,000.

3. Replacement of inventories, $174,000

The unusually severe winter weather resulted in a very high consumption of fuel and other supplies throughout the Federal Prison System. The prisoner population is expected to average at least 20,900 in fiscal year 1958 and the increase over that originally estimated has been absorbed but at the expense of depleted inventories. The severe winter resulted in substantial reductions of safe inventory levels of critical supplies such as coal and fuel oil. Many of the institutions have less than a 30-day supply on hand whereas a 90-day reserve is considered the minimum safe level for penal institution operations. Many other supply items were exhausted and much important routine and preventative maintenance work was deferred because the available funds had to be used for fuel and other must items. This amount is urgently needed to restore depleted inventories to safe operating levels.

Compliance with United States Code, title 5, section 1102 (a) necessitates reclassification actions. The application of the revised classification standards and guides for allocating jobs requires the following reassignments of positions:

Distribution of positions, by grades, after reclassification

Before reclassification		GS–15	GS–14	GS–13	GS–12	GS–11	GS–10	GS–9	GS–8	GS–7	GS–6	GS–5	GS–4	GS–3	Wage Board	
Grade	Number of jobs														$5,440 or above	Less than $5,440
GS–15	5	5														
GS–14	10	5	5													
GS–13	17		12	5												
GS–12	18		2	16												
GS–11	87			10	44	33										
GS–10	40				8	28	4									
GS–9	159				2	45	35	58							19	
GS–8	207					14	46	108	11						28	
GS–7	369							98	15	37					197	22
GS–6	1,843								104	1,249	59				248	183
GS–5	1,408									36	1,258	112				2
GS–4	38											13	25			
GS–3	4												1	3		
Wage Board:																
$5,440 or above	7														7	
Less than $5,440	26														5	21
Total	4,238	10	19	31	54	120	85	264	130	1,322	1,317	125	26	3	504	228

Mr. ROONEY. Mr. Bennett, do you wish to address yourself generally to the question at this point?

GENERAL STATEMENT

Mr. BENNETT. Mr. Chairman, Mr. Clevenger, and gentlemen, I have a general statement with regard to this matter which I will be happy to file with the committee.

Mr. ROONEY. Very well. We shall insert it at this point in the record.

(The statement referred to follows:)

STATEMENT FOR HOUSE SUBCOMMITTEE ON APPROPRIATIONS RE AMENDMENT TO 1959 ESTIMATES, SALARIES, AND EXPENSES, BUREAU OF PRISONS

Mr. Chairman and gentlemen of the committee, we are appearing before you today to request a substantial addition to our operating appropriation for fiscal year 1959 made necessary by circumstances beyond our control. The total of $2,066,000 is made up of three items:

1. For reclassification of positions	$1,753,000
2. For an increase in the estimated average population	139,000
3. For replacement of supplies used to support the present higher population and those used to carry us through a severe winter	174,000

Reclassification of positions

With regard to the first and largest item, it is the result of a revision in civil-service standards for positions in Federal penal and correctional work. These new standards have been carefully applied to all of the field jobs in our agency by our personnel people, and compliance with United States Code, title 5, section 1102 (a) requires reclassification action for a majority of the employees. Our formal justification sets forth the major changes and the groups and grades involved.

I would like to take this opportunity to give you some background information in support of our request for the reclassification money. In enacting the Classification Act of 1949 (5 U. S. C. sec. 1071 et seq.), Congress has required by statute equitable grade relationships among positions in the Federal service. The Civil Service Commission conducted surveys and studies of prison positions during 1957 and approved a revision of the classification standards which were issued under the publication date of December 1957.

This revision in standards has become necessary in recognition of the substantial change in correctional work. Some positions in Federal prisons are classified in the same grade today that they held 20 and more years ago. Over that period the population has increased sixfold at some institutions. The difficulty and complexity of the inmate problems in correctional work today are many times more demanding. The requirement for professional skill in the handling and treatment of prisoner problems has been introduced into this field of work, and the whole area of executive management has changed with respect to the responsibilities of positions involving administration of an institution conducting adult and juvenile educational systems for inmates, vocational training, a modern hospital facility which has been accredited by the Joint Commission of Accreditation of Hospitals, construction and maintenance programs, prison-industries units engaged in manufacturing and production of commodities meeting Federal specifications. A coordinated farm activity comprising dairy, beef, swine, poultry, vegetable enterprises; a professional staff of social workers; a culinary organization planning a balanced ration meeting dietic standards; a mechanical complement which operates sewage, water, fire protection, power-plant, electrical distribution; roads and shops systems, and many other complexities are also involved in a prison community.

In many assignments throughout the Federal prison system, recognition in grade allocation of positions has lagged far behind other occupations in the Federal service, even in other branches of law enforcement. The grade of the correctional officer, who is the frontline employee in direct person-to-person contacts with inmates is the same as it was a generation ago when we employed guards merely to watch and regiment the prisoners. We, therefore, equipped them with clubs to maintain discipline. Today the correctional officers guide

and counsel inmates, act as foremen-supervisors, instruct prisoners in work and conduct habits, carry out plans professionally developed for correctional treatment and for modification of attitudes, and discuss with inmates problems of individual institutional adjustment on which the inmate needs help or instruction.

High standards of performance are required of prison personnel in balancing and coordinating their conflicting responsibilities of rehabilitation and custodial restraint. Character attributes, leadership qualities, courage, sound backgrounds of training and experience are essential for successful careers in this work. The personal qualities plus the complexity of duties and the variety and responsibility of assignments and contracts are recognized in the reclassification increases required by the classification standards established.

Funds for increased population

There isn't much that I can add with regard to the second item in our requests which is for $139,000 to care for an increase in the estimated average prison population. Our system is seriously overcrowded with the population at an all time high of 21,736 on June 12, 1958, almost 1,200 over what it was a year ago. The committment rate is higher this year and the time served is longer. Our appropriation estimate for 1959 was based on an average of 20,800 prisoners but we are now almost certain that it will average at least 21,300. In fact, the most recent estimate for next fiscal year sets the average at 21,500.

Replenishment of inventories

The last item in our request is for $174,000 needed to replenish institution supplies. The high prisoner population, the increase in prices, and the severe winter, all of which we cared for in the current year without additional funds, have resulted, however, in substantial reductions of safe inventory levels of critical supplies. Several of our larger institutions (Chillicothe, Lewisburg, Petersburg) have now completely exhausted their reserve coal supplies and are operating on week-to-week deliveries. At Atlanta the fuel-oil tanks were emptied during the prolonged cold spell and they have been unable to bring the reserve supply back to normal. So it is at most of the other institutions. The emergency repair supplies for the lighting, heating, power distribution, waterlines, communication systems, etc., together with cleaning supplies, building repairs, motor-vehicle parts, and the thousands of other miscellaneous items required to maintain our institutions at 33 different locations in the United States and Alaska have been depleted. In the operation of penal institutions we cannot take a chance on the discontinuance of any services, we must be sure that meals are served on schedule, that there is adequate heat, light, and power at all times and that all security facilities are operable. It is most important that we have the supplies, materials, and repair items on hand so that there are no interruptions in the normal operating routines.

There follows a comparison of our consolidated inventory accounts as of the end of the third quarter of 1958 and it will be noted that there is a considerable reduction in balances over those of a year ago with the total difference set at $257,421.

Consolidated institution inventories

	Stores account	March 31, 1957	March 31, 1958	Difference
11	Subsistence	$539,218	$481,506	[1] $57,712
12	Farm	181,330	183,755	2,425
13	Clothing	721,776	655,019	[1] 66,757
14	Education and welfare	43,019	40,472	[1] 2,547
15	Inmate allowances	77,699	74,605	[1] 3,094
17	Releases	224,007	200,055	[1] 23,952
18	Custody	100,465	92,505	[1] 7,960
	Total, custody, care, and treatment	1,887,514	1,727,917	[1] 159,597
21	Administrative expenses	32,126	35,813	3,687
22	Utilities	177,099	163,386	[1] 13,713
23	Motor vehicles	35,091	36,192	1,101
24	Buildings, grounds, etc	516,391	427,492	[1] 88,899
	Total, maintenance and operation	760,707	662,883	[1] 97,824
	Grand total			[1] 257,421

[1] Reductlon.

Mr. BENNETT. Mr. Chairman, all three of these items were unanticipated at the time we came before this committee with our regular appropriation request. At that time the reclassification and the survey of our personnel by the Civil Service Commission were not completed. It has now, however, been completed, and new standards and specifications were issued under the publication date of December 1957.

Mr. ROONEY. When were they issued? You say it was as of a date in December. When were these new standards issued?

Mr. BENNETT. They were received April 1, 1958.

Mr. ROONEY. Just past?

Mr. BENNETT. Yes.

These new standards provide, among other things, that the mechanical service people in the Bureau of Prisons institutions be taken from the classified service and put into the so-called blue-collar service where their salaries and wages are fixed by local wage boards, similar to what is done in the majority of Government agencies, particularly in the Army and Navy.

Of the total amount of $1,753,000 requested, $496,995 will be necessary to bring our craftsmen into line with present wage board rates throughout the country.

The remainder of the request for appropriations is broken down into 3 groups: Some $24,890 for the parole and training groups, and a total of $190,760 for reclassifying, in accordance with the new standards, certain of our culinary, farm, educational, and administrative personnel. The remainder of the request for personal services, being a total of $820,355, goes for putting into effect the new standards on all custodial positions.

The largest single change, Mr. Chairman, is in our so-called guard force and our custodial force, where the grades, generally speaking, have been raised; for example, from grade 5 in the beginning grade to grade 6.

Mr. ROONEY. May I interrupt to inquire whether or not all these reclassifications have been recommended and approved by the Civil Service Commission?

Mr. BENNETT. Yes; they have.

Mr. ROONEY. Are any of the positions proposed to be increased here to be increased by more than one grade?

Mr. BENNETT. No, sir, no individuals.

Mr. ROONEY. With regard to the guard force and people at the West Street detention prison in New York, concerning whom I spoke to you a number of times, are they included in this reclassification?

Mr. BENNETT. Yes, they are.

Mr. ROONEY. And they would get advances of how many grades?

Mr. BENNETT. One grade, sir.

Mr. ROONEY. Would that bring them any nearer to the amount paid for similar duties by city and State authorities?

Mr. BENNETT. Yes, sir, Mr. Chairman. But our officers would still be below the salaries paid by the State of New York and by California and several other States, but they will be within striking distance, perhaps.

Mr. ROONEY. When one considers the 10 percent pay raise legislation, would that make any difference in bringing them nearer?

Mr. BENNETT. I have taken that into account. That would bring them nearer, but they would still, despite the 10 percent increase, and despite the increase in grade, be below the grade of similar positions in the correctional system of New York.

Mr. ROONEY. These reclassifications that affect those people of whom we spoke would go into effect as of what date?

Mr. BENNETT. As of the date of the availability of this appropriation, sir.

Mr. ROONEY. Are those figures computed on a full-year basis?

Mr. BENNETT. Yes; they are computed on a full-year basis.

Mr. ROONEY. In the event the proposed supplemental appropriation bill, of which an item such as this would be a part, would not be enacted into law until perhaps the middle of July or the 1st of August, is there any way by which these long over-due reclassifications might be taken care of so that these people would not lose that money?

Mr. BENNETT. Only, Mr. Chairman, with your permission we could anticipate that this fund would be made available, and if the House should pass it prior to July 1 we could go ahead and make them effective as of that date.

INCREASE IN PRISON POPULATION

Mr. ROONEY. I regret that that will not be possible due to no fault of this subcommittee. What is the total prison population as of the latest available date? You referred to a date last month, May 8.

Mr. BENNET. The population on June 12, Mr. Chairman, was 21,736, which is 1,165 above the same date last year.

Mr. ROONEY. It might be well if we insert in the record at this point this chart showing the Federal population as of June 12, and the comparison to the previous week in the previous year.

(The table referred to follows:)

Federal prisoners

	Population			Increase or decrease	
	Present	Previous week	Previous year	Previous week	Previous year
Grand total	25,547	25,574	24,457	−27	1,090
Bureau of Prisons Institutions, total	21,736	21,672	20,571	64	1,165
Penitentiaries:					
Alcatraz	263	263	270		−7
Atlanta	2,671	2,650	2,746	21	−75
Leavenworth	2,567	2,559	2,454	8	113
Lewisburg	1,387	1,385	1,268	2	119
McNeil Island	1,075	1,079	1,012	−4	63
Terre Haute	1,326	1,364	1,304	−38	22
Reformatories:					
Alderson	542	543	499	−1	43
Chillicothe	1,280	1,291	1,161	−11	119
El Reno	1,069	1,056	944	13	125
Petersburg	618	594	597	24	21
Institutions for juvenile and youth offenders:					
Ashland	523	520	530	3	−7
Englewood	447	433	410	14	37
National Training School, Federal	389	385	337	4	52
National Training School, District of Columbia	131	131	141		−10
Natural Bridge camp	68	65	81	3	−13
Correctional institutions:					
Danbury	633	600	504	33	129
La Tuna	569	614	540	−45	29
Milan	647	653	668	−6	−21
Seagoville	559	549	472	10	87
Tallahassee	704	706	669	−2	35
Terminal Island (male)	666	662	610	4	56
Terminal Island (female)	148	146	145	2	3
Texarkana	498	495	474	3	24
Prison camps:					
Allenwood	140	139	144	1	−4
Florence	237	193	200	44	37
McNeil Island	247	248	230	−1	17
Mill Point	304	302	262	2	42
Montgomery	351	346	279	5	72
Tucson	154	147	169	7	−15
Detention headquarters, New York	250	284	214	−34	36
Medical center:					
Hospital	795	798	804	−3	−9
Maintenance unit	259	261	245	−2	14
Alaskan jail system	219	211	188	8	31
In transit					
USPHS hospitals, total	792	785	848	7	−56
Fort Worth	270	264	253	6	17
Lexington	491	490	574	1	−83
St. Elizabeths	31	31	21		10
Federal institutions, total	3,019	3,117	3,038	−98	−19
State, county, and city (estimate)	2,369	2,467	2,306	−98	63
Territorial jails (estimate)	650	650	732		−82

Mr. ROONEY. Do you have some information as to the types of prisoners which make up this increase?

Mr. BENNETT. Yes, Mr. Chairman.

Mr. ROONEY. On some sort of comparative basis?

Mr. BENNETT. I have some information as to the change in our population for various offenses—auto theft, moonshining, and so on. Unfortunately, I do not have that with me broken down in detail, but I will be happy to submit it for the record.

(The information follows:)

Court commitments to Bureau of Prisons institutions for the first 11 months, fiscal years 1957 and 1958

Offense	July-May			
	Commitments		Increase or decrease (−)	
	Fiscal year 1957	Fiscal year 1958	Number	Percent
Grand total	12,329	12,367	38	0.3
Total, exclusive of military	12,126	12,273	147	1.2
Total, exclusive of immigration	11,165	11,132	−33	−0.3
Total, exclusive of military and immigration	10,962	11,038	76	0.7
Embezzlement and fraud	506	525	19	3.8
Forgery	1,233	1,133	−100	−8.1
Immigration	1,164	1,235	71	6.1
Juvenile delinquency (except District of Columbia)	795	783	−12	−1.5
Larceny—theft:				
Auto theft	2,589	2,850	261	10.1
Other larceny	992	928	−64	−6.5
Liquor laws	1,988	1,942	−46	−2.3
Narcotics and marihuana	986	1,011	25	2.5
White slave traffic	175	97	−78	−44.6
Juvenile delinquency (District of Columbia)	119	90	−29	−24.4
Military court-martial	203	94	−109	−53.7
Selective Service Act	106	160	54	50.9
All other	1,473	1,519	46	3.1

Mr. BENNETT. I also have a chart here, Mr. Chairman, showing the increase in our prison population according to the length of sentence. The number of men coming into our institutions on longer sentences have increased 41 percent since 1952; that is to say, persons with sentences of 5 years or more. That is accounted for by the fact, Mr. Chairman, that the Federal Government has taken over certain very serious types of offenses like bank robbery. Also, under the Federal Narcotics Act the requirement is that even first offenders must receive a sentence of at least 5 years.

There is one other thing: the discharge rate has been lower due to reduced parole rates, all of which accounts for this increase in our population. It is very severe, very serious, and we are having great difficulties now in finding places for these people.

Incidentally, may I say by way of bringing to your attention another problem with which I know you are very sympathetic—in this appropriation amendment there is no money for additional personal services, all of which accounts for the fact that our prisoner population has been increasing out of proportion to the personnel available to handle them. We are at the lowest ebb we have been for quite a long time in the ratio of personnel to prisoners, notwithstanding the fact that the prisoners being received are a more difficult type. They are the most aggressive group on the whole that we have had in the 22 years that I have been Director of the Bureau and in the almost thirty-odd years that I have been connected with the Bureau.

Mr. ROONEY. Have you discussed this problem with the Attorney General and the Bureau of the Budget?

Mr. BENNETT. Yes.

Mr. ROONEY. What did they decide?

Mr. BENNETT. They decided at this stage there could be nothing that could come before this committee but mandatory items, so to speak.

Mr. ROONEY. In other words, you are permitted to request of this committee nothing but the amounts indicated at page 21 of the House document to which I referred, to wit, $2,066,000; is that right?

Mr. BENNETT. That is correct, sir.

REPLACEMENT OF INVENTORIES

Mr. ROONEY. With regard to the part of this item entitled "Replacement of inventories," the request in the amount of $174,000, you point out this is the result of a hard winter and you therefore want this additional money. As far as I can remember when we have had easy winters we never had anybody offer to return any money to the Treasury.

Mr. BENNETT. Well, Mr. Chairman, that goes to illustrate how careful this committee is in looking over our estimates because we have had just enough funds to maintain our inventories at their normal levels. This replacement of inventories at a cost of $174,000 represents perhaps 5 percent of our total expenditures for these items of food, clothing, fuel, utilities, and all of the other supply items. It has to be related to our total requirement for supplies, which is $6,965,000. We spend about $7 million a year for items of this kind, and we estimate very carefully and closely. In order that we can do the planning properly, and in order that the apportionment system under which we operate can be carried out effectively, we are submitting this for your consideration. It is something that we cannot avoid.

Incidentally, also, it would help in a very small way to make purchases at this time in order to stimulate the market. We are trying to do that as best we can.

Mr. ROONEY. Do you think this $174,000 might have some effect upon the recession?

Mr. BENNETT. Infinitesimally, but it is all in accordance with the policy to accelerate and anticipate purchases.

Mr. ROONEY. Thank you, gentlemen.

Mr. BENNETT. Mr. Chairman, before I leave, I wonder if it would be appropriate for me to say that I have been appearing before this committee for a good many years—upward of 25—and I should like to record my regret that your distinguished ranking member, the Honorable Cliff Clevenger, of Ohio, is going to retire. I want to express my appreciation for his very kind attention to all our problems while he has been on this committee and for the understanding, careful, and intelligent way in which he has looked into our estimates. We shall sadly miss him here, but I understanding he is going to be a neighbor of ours out in Ohio. We wish him well and hope he will come to see us frequently.

Mr. CLEVENGER. Thank you for those kind words.

Mr. ROONEY. It is nice of you to say that, Mr. Bennett.

You have expressed the thoughts, I am sure, of everybody on both sides of the table who are presently in the room, as well as many, many other people.

FRIDAY, JUNE 20, 1958.

DEPARTMENT OF STATE

SALARIES AND EXPENSES, ADMINISTRATION OF FOREIGN AFFAIRS

WITNESSES

LOY W. HENDERSON, DEPUTY UNDER SECRETARY FOR ADMINISTRATION
WILLIAM O. HALL, DEPUTY ASSISTANT SECRETARY FOR BUDGET AND FINANCE
DR. WALLACE R. BRODE, SCIENCE ADVISER
PHILIP J. FARLEY, SPECIAL ASSISTANT TO THE SECRETARY FOR DISARMAMENT AND ATOMIC ENERGY
FREDERICK T. MERRILL, DIRECTOR OF EAST-WEST CONTACTS STAFF
FREDERICK W. JANDREY, DEPUTY ASSISTANT SECRETARY FOR EUROPEAN AFFAIRS

Mr. ROONEY. The first item for the consideration of the committee this afternoon is a request contained at page 24 of House Document No. 394 for the Department of State for administration of foreign affairs, salaries and expenses, for an additional amount for salaries and expenses, $854,000.

At this point we shall insert in the record pages 1, 10, and 11 of the justifications.

(The material follows:)

(H. Doc. 394)

Salaries and expenses, State

Request (for 12 months from July 1, 1958)	$854,000
Budget estimate	$105,000,000
Employment:	
Average number current appropriation	13,250
Number involved this estimate	56
Actual employment, April 30, 1958	12,795

PURPOSE AND NEED FOR SUPPLEMENTAL FUNDS

Of this proposed supplemental appropriation, $631,000 is to expand the science program of the Department of State. The majority of the funds would be used to place science attachés at major posts overseas. The remaining funds would provide additional supporting staff in Washington who will also advise on international scientific developments as they affect our foreign relations.

Also included are funds for disarmament activities, which have recently been transferred to the Department of State, and for tour guides and interpreters for Soviet-bloc groups touring the United States under the increased East-West exchange program.

Summary of proposed supplemental

	Science program		Disarmament program		East-West exchange program	Total	
	Positions	Annual rate or amount	Positions	Annual rate or amount		Positions	Annual rate or amount
Domestic:							
Permanent positions and annual rate	9	$72,745	8	$53,450		17	$126,195
Deduct lapse		−10,369		−1,801			−12,170
Regular pay above 52-week base		280		201			481
Permanent salary cost	9	62,656	8	51,850		17	114,506
Miscellaneous salary and non-salary obligations		16,633		107,150	$64,000		187,783
Total domestic	9	79,289	8	159,000	64,000	17	302,289
Foreign Service:							
Personal services	39	290,766				39	290,766
Operating expenses		260,945					260,945
Total Foreign Service	39	551,711				39	551,711
Total supplemental requirement	48	631,000	8	159,000	64,000	56	854,000

Summary, science program

	Original program, 1959 budget [1]		Present program, in 1959 budget [2]		Total 1959 requirement		Supplemental requirement	
	Positions	Annual rate or amount	Positions	Annual rate or amount	Positions	Annual rate or amount	Positions	Annual rate or amount
Domestic:								
Permanent positions and annual rate	4	$34,160	7	$63,025	16	$135,770	9	$72,745
Deduct lapse		−2,215		−1,575		−11,944		−10,369
Regular pay above 52-week base		131		245		525		280
Permanent salary cost		32,076		61,695		124,351		62,656
Miscellaneous salary and non-salary obligations		28,584		34,887		51,520		16,633
Total domestic costs		60,660		96,582		175,871		79,289
Foreign Service:								
Personal services	8	76,236	7	61,552	46	352,318	39	290,766
Operating expenses		43,864		22,626		283,571		260,945
Total Foreign Service	8	120,100	7	84,178	46	635,889	39	551,711
Grand total science program	12	180,760	14	180,760	62	811,760	48	631,000

[1] Throughout this supplemental the "Original program, 1959 budget" column reflects the distribution of the funds available for the science program in the original 1959 budget at the time of its preparation, which was prior to the completion of a departmental study of present science-program needs.

[2] The "Present program, in 1959 budget" column represents that portion of the proposed science program that can be financed with the funds available in the original 1959 budget.

Mr. ROONEY. Do you have a general statement with regard to this, Mr. Secretary?

Mr. HALL. I might say there are 3 items: first for the science program, 48 positions, $631,000; second is for disarmament, 8 positions, $159,000; the third is for East-West contacts, $64,000. Dr. Brode is here and will speak to the first item, the science program.

Mr. ROONEY. The amount is what?
Mr. HALL. $631,000.
Mr. ROONEY. Very well; you may proceed.

SCIENCE PROGRAM

Dr. BRODE. I have a statement, if I may read it.

The Department of State has proposed a science program which has been approved by the science adviser to the President and which has been coordinated with the President's Science Advisory Committee and the National Science Foundation so that it is an integral part of a realistic American science program. This proposed State Department science program is now before this committee for approval.

Science is becoming recognized as an integral part of the conduct of our national and international affairs and as such assumes stature with the economic, political, and social aspects.

Mr. ROONEY. Have we not had a science program in the Department of State and scientific attachés in the past?

Dr. BRODE. Yes, we have.

Mr. ROONEY. How much is being expended during the current fiscal year for a science program in the Department of State?

Mr. HALL. $180,760.

Mr. ROONEY. How much was previously requested for fiscal year 1959 in connection with the regular bill which is now about to go to conference?

Mr. HALL. This is the amount carried in the 1959 bill. You will recall, Mr. Chairman, Mr. Henderson indicated, when we appeared, there was pending a supplemental estimate as part of the President's general science program and that the Department would be before the committee later on a supplemental basis on this item.

Dr. BRODE. To keep the Secretary of State and his Department fully informed of the implications of science on our international policies, I have been appointed as science adviser to the Secretary. In order to carry out the functions of this office, it is necessary to have a technical staff here and abroad to evaluate and assess current trends and developments in science, to increase the flow of scientific information on an international basis, to enhance international cooperation and communication, to assist and advise on problems which require scientific appraisal, and to support scientifically the science committees of the various international organizations such as UNESCO, NATO, and OEEC.

This basic concept of a science adviser and a science attaché program is not a new one. In 1951, the State Department experimented on a minor scale with scientific representation in a limited number of countries. However, the program was curtailed in 1953 because of financial limitations. During and since this period, some 22 countries have assigned science representatives to their embassies in Washington. The usefulness of these attachés to their countries and their reception by scientists of this country, coupled with the increasing demands from our scientists, scientific societies, industry, and Government for similar representation have served to point up the need

for the expanded Department of State science attaché program proposed. Great Britain, Canada, Australia, Germany, U. S. S. R., Italy, France, Netherlands, Japan, Sweden, are a few of the countries with science attachés here.

There is a continual interaction of science and international policy. There are primary scientific considerations in problems such as law of the sea and utilization of resources of the sea, control and utilization of outer space, Arctic and Antarctic territorial claims and research, air pollution control, international weather control and prediction, oceanographic research, disarmament, cooperative research programs, and the exchange of scientists, scientific students, scientific equipment, and techniques.

The domestic staff in Washington will consist of the science adviser, a deputy and five technical assistants. These latter will cover assigned areas of physical, biological, and engineering sciences and a general scientific support to the Science Committee of UNESCO, NATO, and OEEC. The overseas portion of this program will consist of a science attaché and a deputy stationed in London, Bonn, Rome, Stockholm, Moscow, Paris, New Delhi, Tokyo, and Rio de Janeiro. The science attaché will have as his primary function serving as an adviser to the Ambassador. In approximately 20 other areas qualified Foreign Service officers will be assigned to spend part of their time on this program.

The science attachés will be expected to attend and report on important scientific meetings in the countries to which they are accredited and to maintain a close and continuing relationship with the scientific community in those countries. In order to fully utilize the scientific competence of our attachés abroad, it is planned that upon occasion the attaché in London, for example, who might be a physicist, would be called on to cover important physical science meetings on the Continent or in France where the science attaché might be a biologist or chemist who is not qualified to cover the technical aspects of work in physics. This explains in part the funds requested for travel. It is also anticipated that the science attaché will be called on to speak to scientific and other groups in the country to which he is assigned and provision has been made for his travel to such meetings.

The specific details of the budget are before you. The existing level of scientific work in the Department provided for $180,760 and a total of 14 positions, of which 7 are in the Department and 7 abroad. The total of the program under the new budget would be $811,760 with 62 persons assigned to the program, of whom 16 would be in Washington and 46 in the field. The supplemental requirement is for 48 positions at the annual rate of $631,000. I believe that the justification which you have before you covers most of the details of this request, but I will be pleased to answer any questions which you may have about the details of our proposal or the proposed method of work.

PROGRAM PERSONNEL

The budget is given on page 11 of the supplement.

Mr. Rooney. How many of the 48 would be in Washington?

Dr. Brode. Of the 48, 9 are in Washington.

Mr. ROONEY. What are the grades?

Dr. BRODE. One 18, one 16, and 3——

Mr. ROONEY. Where do we find them?

Mr. HALL. The detail of the proposed science officers in Washington and the particular positions requested in this supplemental is on page 14.

Dr. BRODE. The complete list is in the third column.

Mr. ROONEY. If I understand page 14 correctly, the 16 to which you referred, you already have——

Dr. BRODE. No, we do not——

Mr. HALL. Seven are in the present program, as shown in the second column. These 7 are already established and 9 are proposed for a total of 16.

Mr. ROONEY These 9 people in Washington would cost $72,745 plus other objects?

Mr. HALL. Yes, sir.

Mr. ROONEY. What are the other objects?

Mr. HALL. The other objects amount to $16,633.

Mr. ROONEY. It might be well to insert page 14 at this point in the record.

Executive direction and policy formulation, Office of the Secretary and staff, domestic—Permanent salary expense

Unit	Original program, 1959 budget			Present program in 1959 budget			Total 1959 requirement			Supplemental requirement		
	Positions	Grade	Annual rate or amount	Positions	Grade	Annual rate or amount	Positions	Grade	Annual rate or amount	Positions	Grade	Annual rate or amount
The Secretary:												
Science adviser	1	GS–17	$13,975	1	GS–18	$16,000	1	GS–18	$16,000			
Deputy science adviser							1	GS–16	13,760	1	GS–16	$13,760
Technical experts				1	GS–15	12,690	4	GS–15	50,760	3	GS–15	38,070
Liaison officer	1	GS–14	11,180	1	GS–15	11,610	1	GS–15	11,610			
Technical scientific aide				1	GS–13	10,065	1	GS–13	10,065			
Secretary (for adviser)	1	GS–7	5,335	1	GS–9	5,575	1	GS–9	5,575			
Secretary							3	GS–7	13,575	3	GS–7	13,575
Do				1	GS–5	3,670	3	GS–5	11,010	2	GS–5	7,340
Clerk-stenographer	1	GS–4	3,670	1	GS–4	3,415	1	GS–4	3,415			
Total positions and annual rate	4		34,160	7		63,025	16		135,770	9		72,745
Miscellaneous salary and nonsalary obligations:												
Object classification:												
01 Personal services:												
Overtime and holiday pay			500			1,000			3,500			2,500
02 Travel			1,000			4,897			15,000			10,103
07 Contractual services			25,000			25,000			25,000			
11 Contribution to civil service retirement fund			2,084			3,990			8,020			4,030
Total miscellaneous salary and nonsalary obligations			28,584			34,887			51,520			16,633

PROGRAM OBJECTIVES

Mr. ROONEY. In language we can understand, exactly what are these people going to do? What is the objective of this new setup?

Dr. BRODE. This is to maintain the scientific position of the United States among scientists abroad.

Mr. ROONEY. What will they do?

Dr. BRODE. They will advise the ambassador on specific problems which come up which involve scientific questions, outer space, methods of communication, weather control, things of this sort in which there is a request for this country to cooperate with other countries.

They will provide knowledge for scientists who wish to contact people in other countries to find out information. They will provide the necessary interlock or communication for the exchange of publications and communications. They will provide a contact for international meetings so that there is a proper representation of this country in science meetings held abroad, and that the people who come from this country to attend are properly received. If there are no people from this country, as recently occurred in India, where there was a meeting of importance and there was no representative it creates a deficiency in maintaining our position in science throughout the world. This could have been avoided by attendance by a scientific attaché.

Mr. ROONEY. Do they make speeches in the countries to which assigned?

Dr. BRODE. Yes, sir, technical, trying to establish the position of the American scientists. They will themselves be highly trained experts and in their field of specialization it would be expected they would give professional talks as a means of maintaining our scientific prestige. These people will be in a rotation so new people will come in. We expect our people to take professional material with them, to give professional talks to maintain their position and our position in the world of science.

SPEECHES IN THE UNITED STATES

Mr. ROONEY. What will this almost $100,000 worth of people do in Washington, D. C.? Are they going to make speeches, too?

Dr. BRODE. Yes; some of them will.

Mr. ROONEY. Where?

Dr. BRODE. Before individual and scientific groups so as to maintain the contacts from those groups to foreign science connections. They will deal with societies and industrial groups, to provide necessary knowledge and service. They will attend technical meetings for the purpose of acquiring information to send to our people abroad so they will have firsthand information on the new developments in this country so as to keep our people abroad informed.

TRAVEL REQUIREMENTS

Mr. ROONEY. You want $15,000 for travel for these people to go around making speeches in the United States?

Dr. BRODE. They will want $15,000 for travel to attend technical scientific meetings to acquire material. They will not make speeches necessarily on many of these occasions. If they are distinguished scientists, as we are hoping these will be, they may be asked to talk about the State Department and this Nation's foreign science program.

Mr. ROONEY. To sort of build it up a bit?

Dr. BRODE. To build up our prestige and build up the interest of Americans in maintaining contact abroad.

Mr. ROONEY. You say build up prestige. With whom, the American public?

Dr. BRODE. Build up prestige with the American public in the science program in international exchange so that the Americans will engage in international exchange of science so as to improve our position abroad.

FOREIGN PROGRAM

Mr. ROONEY. We also have at pages 17 and 18 some information with regard to this proposed program on the Foreign Service side. There you request the amount by way of this supplemental of $290,766; is that correct?

Dr. BRODE. This is correct.

Mr. ROONEY. Where do we find some information with regard to the grades of these people?

Mr. HALL. In the justifications on page 15 it is stated that the science attachés will be in London, Paris, Bonn, Stockholm, Moscow, Rome. That is in the text at beginning of 15 in the description for the basis for the estimate, just 2 pages before the presentation on 17.

SUMMARY OF COST OF SCIENCE PROGRAM

Mr. ROONEY. Please insert at this point in the record a chart which may be readily understood as to the posts and the grades, number of people, and the cost.

Mr. HALL. Yes, sir.

(The information referred to follows:)

Summary costs, science program

Position	Grade	Number	Annual rate
PERMANENT SALARY COSTS			
DOMESTIC			
Science adviser	GS-18	1	$16,000
Deputy science adviser	GS-16	1	13,760
Technical experts	GS-15	4	50,760
Liaison officer	GS-15	1	11,610
Technical scientific aide	GS-13	1	10,065
Secretary (for adviser)	GS-9	1	5,575
Secretary	GS-7	3	13,575
Secretary	GS-5	3	11,010
Clerk-stenographer	GS-4	1	3,415
Total positions and annual rate		16	135,770
Deduct lapse			−11,944
Add regular pay above 52-week base			525
Net salary cost, domestic		16	124,351
FOREIGN SERVICE			
Bureau of European Affairs:			
London:			
Science attaché	FSR-1	1	14,600
Technical assistant	FSR-5	1	7,400
Secretary	FSS-11	1	4,225
Local clerk	FSL	1	1,700
Paris:			
Science attaché	FSR-1	1	14,600
Technical assistant	FSR-5	1	7,400
Secretary	FSS-11	1	4,225
Local clerk	FSL	1	2,100
Bonn:			
Science attaché	FSR-1	1	14,600
Technical assistant	FSR-5	1	7,400
Secretary	FSS-11	1	4,225
Local clerk	FSL	1	1,900
Moscow:			
Science attaché	FSR-1	1	14,600
Technical assistant	FSR-5	1	7,400
Secretary	FSS-11	1	4,225
Local clerk	FSL	1	1,500
Rome:			
Science attaché	FSR-1	1	14,600
Technical assistant	FSR-5	1	7,400
Secretary	FSS-11	1	4,225
Local clerk	FSL	1	1,800
Stockholm:			
Science attaché	FSR-1	1	14,600
Technical assistant	FSR-5	1	7,400
Secretary	FSS-11	1	4,225
Local clerk	FSL	1	2,000
Bern:			
Political officer (science)	FSO-3	1	10,600
Clerk-stenographer	FSS-12	1	3,800
Bureau of Inter-American Affairs:			
Rio de Janeiro:			
Science attaché	FSR-1	1	14,600
Technical assistant	FSR-5	1	7,400
Secretary	FSS-11	1	4,225
Local clerk	FSL	1	3,800
Buenos Aires:			
Political officer (science)	FSO-3	1	10,600
Clerk-stenographer	FSS-12	1	3,800
Bureau of Far Eastern Affairs:			
Tokyo:			
Science attaché	FSR-1	1	14,600
Technical assistant	FSR-5	1	7,400
Secretary	FSS-11	1	4,225
Local clerk	FSL	1	2,300
Manila:			
Political officer (science)	FSO-3	1	10,600
Clerk-stenographer	FSS-12	1	3,800
Canberra:			
Political officer (science)	FSO-3	1	10,600
Clerk-stenographer	FSS-12	1	3,800

Summary costs, science program—Continued

Position	Grade	Number	Annual rate
FOREIGN SERVICE—Continued			
Bureau of Near Eastern and South Asian Affairs, New Delhi:			
Science attaché	FSR-1	1	$14,600
Technical assistant	FSR-5	1	7,400
Secretary	FSS-11	1	4,225
Local clerk	FSL	1	1,300
Bureau of African Affairs, Pretoria:			
Political officer (science)	FSO-3	1	10,600
Clerk-stenographer	FSS-12	1	3,800
Total positions and annual rate		46	326,425
Deduct lapse		−9	−64,763
Add for differentials and pay above 52-week base			10,763
Net salary cost, Foreign Service		37	272,425
Total net salary cost, Domestic and Foreign Service			396,776
MISCELLANEOUS AND NONSALARY COST			
Domestic			51,520
Foreign Service			363,464
Total miscellaneous and nonsalary cost			414,984
Total costs, science program			811,760
Deduct amount in fiscal year 1959 budget			−180,760
Total supplemental request for science program			631,000

USE OF LOCAL EMPLOYEES

Mr. ROONEY. Are we eventually also going to have local employees in connection with this program?

Mr. HALL. There will be in certain cases.

Mr. ROONEY. Are there any local employees included in this proposal at the present time?

Mr. HALL. Yes, sir.

Mr. ROONEY. You have seven local employees included in this set-up?

Mr. HALL. Total of 9 local, 7 additional requested; yes, sir.

Mr. ROONEY. Are they going to make speeches, too?

Dr. BRODE. They are very junior personnel.

Mr. ROONEY. Do you have any questions?

WEATHER CONTROL

Mr. CLEVENGER. I was wondering if you were aware of a legislative action last night in extending the life of the group to study weather control. You spoke of acting with them.

Dr. BRODE. We are very pleased to do so.

Mr. CLEVENGER. This committee furnished the funds for that for 5 or 6 years. They never came up with anything very concrete in the way of accomplishment. Last night they stampeded the House just before they went home with the idea that they could control forest fires along the Pacific coast by cloud seeding. I do not know how many millions in all we appropriated for it, but we finally ordered them to make a report to Congress of their progress and wind up their operation as such.

Do you believe they have the possibility of controlling forest fires and really doing something about the weather?

Dr. BRODE. There is certainly a practical aspect to it. Under certain weather conditions you can create rain.

Mr. CLEVENGER. I agree with that. Is it something that promises enough hope to continue to sink money into it like they were doing?

Dr. BRODE. Yes. It must be spent wisely.

Mr. CLEVENGER. We had considerable complaint from some places. There is complaint that: "You have my water and I would have had it here if you had not seeded the clouds."

I wonder if we are not somewhat bemused in our haste to spend every available dollar we can extract from the American taxpayer. I just wanted to know, you being a scientist, if you thought there was some scientific reason for our continuing that weather-control operation. The Weather Bureau does not buy any stock in it, of course.

Dr. BRODE. I would say it should be continued but under the Weather Bureau's general operation.

Mr. CLEVENGER. I would think so, too, but that was not the way they were running the show. It seems to me a retired naval officer, having a pet project, that he persuaded a United States Senator to father it and we had to stepfather it to furnish the funds. My sympathies were with the committee in requiring them to liquidate it, and make a report on what they found. I have never seen the report. I do not know if they found they could do anything worthwhile or not.

I was the lone vote against it last night, I believe. It was a voice vote, not a record vote. With that I went home. That was the last thing I did, to vote "No" on that thing, vocally and vociferously. We are getting into scientific research and study and development and the hundreds of millions of dollars we are putting into research really ought to begin to pay off pretty soon.

Dr. BRODE. It is paying off in many areas. Research pays off.

Mr. CLEVENGER. It does in some technical fields. Still I think they should keep it within the realm of commonsense and not just go bankrupt with research. By and by we will have lots of research and no resources in the United States.

Dr. BRODE. I am not worried.

Mr. CLEVENGER. I guess I am the only one who is so far as I know. I am the only one who has increased blood pressue to any pronounced degree in this 20 years. Back home a lot of taxpayers are beginning to wonder, I can tell you. We have seen the increased billions almost spent in public schools and back home there is a great feeling that we are not getting very good results from our new school system, that we have forgotten the elements of education. We have a lot of people who think Mr. Ford and Mr. Edison and Mr. Kettering, not being graduates and having a lot of degrees, that they did not know anything, by that standard many think they are dumbbells.

Dr. BRODE. I taught in Ohio for a number of years.

Mr. CLEVENGER. Who has contributed more than those three men I speak of? I am just taking the ones who lived in Ohio. The modern automobile has much of the one gentlemen's ability in it, but he

never had a college degree. We hire some of the end products in a store and they do not know how to deduct 10 percent if there is a 10-percent discount on something. They have never learned that you need to put just one dot on the page with a lead pencil. I am beginning to wonder how wisely we are spending our money. We have a lot of pseudoscientists or what-have-you, newspapermen, columnists, and broadcasters scaring the people that for some reason or another the Russians might deflect the Japanese current or gulf stream and ice up our country. Do you believe that?

Dr. BRODE. A part of our program is to enable us to keep knowledgable of what is claimed in discoveries abroad so as to avoid unnecessary expenditures on our own part and so as to take advantage of what is discovered abroad in science and transmit this back to our own scientists. I think this program will pay off many times through the services it can provide to our own industry and research scientists.

Mr. ROONEY. You did not answer the question asked. Now you have my curiosity aroused. What about that?

Mr. CLEVENGER. He has given me a pious hope.

Dr. BRODE. I think we will avoid unnecessary expenditures in research by taking advantage of what other people have done and tried, and in order to find this out in many cases we must go to the laboratories because quite often people do not report failures.

Mr. ROONEY. What about the ice?

Mr. CLEVENGER. Do you think they can control the ocean currents or deflect them?

Dr. BRODE. We need atomic energy experts on that.

Mr. ROONEY. You have dodged that pretty well.

Mr. CLEVENGER. That is one of the reasons he is here.

Mr. ROONEY. It may not be in his field.

Dr. BRODE. No. This program is to collect information on work others have done. The State Department is not an operating agency with respect to science. It is an advisory agency to collect and provide to those people who do the work.

Mr. CLEVENGER. We have advisers to the advisers and advisers to those advisers. It is just like the bugs and the little bugs.

I would like a little ray of hope before I go home so that I may figure what I voted for down here was not a total waste.

Dr. BRODE. I am sure it was well invested; we profit by the information others provide. We are not ahead in science. We are just one of the team. We have to find out what the others are doing. This is one of the ways.

Mr. CLEVENGER. Do you fall for what I believe is the myth that Russians have suddenly become supermen? You know what they did with their educated people 40 years ago, they began killing them. They have been killing them for 20 years in China, liquidating the best minds in China. They have that operation every morning over there. Yet we may have China dominating the communistic world pretty soon. I do not see how a nation can progress and become so dangerous in science and kill off its educated people, the smartest of its race.

Dr. BRODE. Germany was smart scientifically but failed to recognize social responsibilities.

Mr. CLEVENGER. That is right. I for one do not go to bed at night shivering about what a Russian can do. A bayonet will hurt him as

it will us. I do not want to put an American soldier on the ground fighting in hand-to-hand combat. We voted last night for another bill to loosen up the control of fissionable materials and authorize using it. This probably increases a thousand times the capability of some fellow with a brain making some nuisance bomb that may destroy this Capitol just because he got his wiring short-circuited and burned out. I voted for that bill. I did that with misgiving. I think we are in a highly emotional state.

I would hate to trust Russians with the nihilist element in Russia that is not Russia but is of Russia with all that mischief to create and to kill the rest of us. I do not think they are going to kill us, 30 or 40 or 50 million of us, but they could put consternation in this country by exploding one bomb that they might concoct from present knowledge. They could put it in a suitcase and put it in the Capitol. If you exploded one in New York, 20 million would be killed by the other 40 million running for the exits.

This in itself is not too much money but they are all small when you plant them. Do you believe this would be a good investment?

Dr. BRODE. I think it would be an excellent investment.

Mr. CLEVENGER. Thank you.

GENEVA MEETINGS WITH COMMUNIST CHINA REGARDING AMERICAN PRISONERS

Mr. ROONEY. Reference was made by Mr. Clevelenger to Communist China. While I realize that this has nothing to do with the instant requests, I wonder what is the present situation concerning the Geneva meetings that had been conducted up until some time ago by Ambassador Alexis Johnson. What has happened to all those negotiations?

Mr. HENDERSON. They are in abeyance at the present time.

Mr. ROONEY. They have been in abeyance how long?

Mr. HENDERSON. Several months.

Mr. ROONEY. Months?

Mr. HENDERSON. Yes.

Mr. ROONEY. Is it not longer than that?

Mr. HENDERSON. Several months. Ever since Mr. Johnson left for Bangkok there have been no meetings.

Mr. ROONEY. Has anyone been appointed to take Ambassador Johnson's place?

Mr. HENDERSON. We designated an officer in London to take over this work.

Mr. ROONEY. What happened?

LONG DELAY IN RESUMPTION OF MEETINGS

Mr. HENDERSON. The Chinese Communists, as I recall, have not been willing to meet him because they insist that meetings be at ambassadorial level. This man does not have the rank of ambassador. I believe we are considering what to do in this regard. Mr. Jandrey may be better acquainted with that problem. He is Deputy Assistant Secretary for European Affairs.

Mr. JANDREY. I can confirm what Mr. Henderson has said and merely say that at the present time there are under consideration several possibilities as to how these meetings can be resumed, but the Chinese were unwilling to accept the appointee because he was not on

an ambassadorial level. The question is now who among our ambassadors in Europe can best conduct these meetings and where they should be conducted. This is being considered right at the present time.

Mr. ROONEY. How long is it since Ambassador Johnson left Prague? It seems to me that it was a long while ago.

Mr. HENDERSON. About 6 months, I believe.

Mr. JANDREY. I would say about 6 months.

Mr. HENDERSON. Maybe a little longer.

Mr. ROONEY. Are these negotiations not of sufficient importance to get someone in immediately to negotiate with the Chinese Communists regardless of rank?

Mr. HENDERSON. They are important, and we expect to resume them. It seems to us rather silly to insist that a man must be an ambassador before he can carry on these negotiations.

Mr. ROONEY. If it would mean the release of these Americans held by the Chinese Communists, why could we not accommodate them immediately and sit down with them and work it out?

Mr. HENDERSON. We are not sure this would mean the release of these men. We have great doubts.

Mr. ROONEY. It might be a step toward the release. Is that correct?

Mr. HENDERSON. That is right, it might be.

Mr. ROONEY. Why are we not willing to take that step?

Mr. HENDERSON. I do not think we are unwilling to do so. I think this is a question which is being considered. We may be considering which of our Ambassadors in Europe would be the person designated.

Mr. ROONEY. Has it taken 6 months to select someone?

Mr. HENDERSON. I think it was not more than 3 or 4 months ago that the Chinese took this position. Is that correct, Mr. Jandrey?

Mr. JANDREY. That is right.

Mr. ROONEY. Why should it take even 3 or 4 months? Why not 3 or 4 days?

Mr. HENDERSON. I cannot answer that question, I am sorry. I have not been handling the particular matter. I do know the Department has been interested in this.

Mr. ROONEY. I have had a number of Members of the House speak to me about this. As a matter of fact, while I was gulping down a few pieces of lunch just before returning to the committee room I had some people who inquired with regard to what is happening on this. They do not understand why we do not have someone there sitting and meeting with the Chinese, no matter how long it takes to get them out. If we do nothing for 6 months, these are 6 months in the lives of these Americans, is it not?

Mr. HENDERSON. Yes, sir. On the other hand, the Chinese even during the negotiations acted in a most leisurely manner. There would be a meeting and they would find some pretext to discontinue.

Mr. ROONEY. But at least Ambassador Johnson did succeed to some extent, did he not? I thought he was doing an admirable job.

Mr. HENDERSON. He was, indeed.

Mr. ROONEY. Did you promote him to Bangkok? Is that a better post?

Mr. HENDERSON. I do not know whether one should call it a promotion. He was a Far Eastern expert stationed in Czechoslovakia; it seemed that we needed someone in Bangkok who was an expert on the Far East; he was, therefore, sent to Bangkok as a person peculiarily qualified for work there. We think he is more valuable to the United States in Bangkok than he was to us in Prague.

Mr. ROONEY. Well, I could not dispute that. I thought he was a very capable Ambassador in Prague and I thought he was doing very well under the circumstances with the needless delays and disheartening positions taken by the Communist Chinese in regard to the release of these Americans. But it seems to me, as expressed by those who inquired about this situation, that the Department of State is just dragging its feet at the present time.

Mr. HENDERSON. Mr. Chairman, I will be very glad to submit a statement from the Department on that subject.

Mr. ROONEY. I think you should be accorded the right of stating the position of the Department of State as to this long delay. I think you are entitled to that.

Mr. HENDERSON. Thank you.

(The information follows:)

The Geneva talks began on August 1, 1955. On September 10, 1955, the Chinese Communists in an agreed announcement stated that Americans were free to leave Communist China and that they would take appropriate measures to permit them expeditiously to return to the United States. At the time this announcement was issued the only Americans the Chinese Communists acknowledged holding were the 19 American civilians imprisoned by the Chinese Communists whose release we had been discussing. United States representative, Ambassador U. Alexis Johnson, continued to urge the Chinese Communists to honor their commitment to permit these people expeditiously to depart. During nearly 2½ years he met altogether 73 times with the Chinese Communist representative.

Far from fulfilling their commitment to release the Americans expeditiously, the Chinese Communists continued to hold them as political hostages, effecting releases only at lengthy intervals. Although the discussions had dealt only with Americans detained by the Chinese Communists, within a few months they began to claim that the agreed announcement did not apply to those in jail, and since the end of 1955 they have compelled each prisoner to serve the full term to which they sentenced him. They also adamantly refused to even discuss an accounting for missing military personnel from the Korean war and rejected our proposal for a reciprocal renunciation of force in the Taiwan area. Glossing over their failure to fulfill their commitment to release Americans, they introduced a series of proposals for a Foreign Ministers' Conference, for the removal of American trade restrictions, for cultural exchanges and the exchange of correspondents, and for the signing of a judicial assistance agreement. They endeavored to exploit these proposals for propaganda purposes.

For many months before Ambassador Johnson's final meeting with the Chinese Communists on December 12, 1957, it was evident that they had no serious intention of seeking an understanding with the United States through these discussions. They continue to reject Ambassador Johnson's efforts to cause them to live up to their commitment to release Americans.

Because of the sterility of the talks over the 2 years prior to Ambassador Johnson's transfer, it was decided for the time being to appoint his assistant, Edwin W. Martin, as the American representative to the talks rather than another ambassador. The Chinese Communists have refused to meet with Mr. Martin, on the ground that he is not of ambassadorial rank. We have let them know that we intend to appoint an ambassador to continue the talks and that in the meantime Mr. Martin stands ready to meet with their representative.

There is little ground for hope, on the basis of our experience in the Geneva talks during the past 2 years, that continuation of the talks at the ambassadorial level will be any more effective than it has during the past 2 years in causing the Chinese Communist regime to fulfill its promise to release Americans expeditiously. Nevertheless, in order to keep before the world the Chinese Commu-

nists' callous disregard of this solemn commitment, we intend in the near future to appoint an ambassador to meet with their representative.

ACCOMPLISHMENTS OF SCIENTIFIC ATTACHÉ PROGRAM

Mr. ROONEY. A question of Mr. Clevenger's brings to my mind this question: Since this scientific attaché program was instituted, Doctor, what have been the successful results thereof? To what accomplishments would you point with pride?

Dr. BRODE. This program was initiated since my coming to the Department in January and we have been in the process of recruiting personnel for this program. We have no one in the field yet, so we cannot point to current accomplishments, but in the previous period when we had scientific attachés it was possible to maintain the position of Americans in international meetings through the medium of the scientific attachés, and it was possible for these people to collect information for industrial and university research workers and send it back so that these people could obtain information of importance.

Mr. ROONEY. Would you put it in words that a reader of this record that was not a scientist or a diplomat could readily understand? What would you say was the outstanding success, if any, of this program?

Dr. BRODE. I think an outstanding success was an increase in the flow of unpublished information which I am sure was generated by the contacts which these people made.

Mr. ROONEY. And what has that resulted in, if anything?

Dr. BRODE. It has resulted in an acceleration of the United States research program.

Mr. ROONEY. Can I get you away from these broad general diplomatic statements and get you to say something a reader of this record would thoroughly understand? What is one thing that has been accomplished other than that you might have upheld the position of American scientists and all these other things to which you referred?

Dr. BRODE. I think it is not possible to put your finger on specific items. I went over the reports of the attachés, and they make very interesting reading and show day-to-day progress, which would fill the record with a large minutiae, but when this minutiae is added together it is a substantial contribuion.

Mr. ROONEY. Are you going off in the printing field in connection with this program?

Dr. BRODE. No; we are not.

Mr. ROONEY. Who looks at these reports, you people back here in Washington?

Dr. BRODE. We serve as the medium of contact so that the Library of Congress, the National Science Foundation, and others can get the information.

FUNDS REQUESTED BY LIBRARY OF CONGRESS

Mr. ROONEY. That reminds me that the Library of Congress, in their appropriation requests for fiscal 1959, want to send people overseas in connection with scientific information. Are you familiar with that?

Dr. BRODE. Yes; I am. These programs are well coordinated. We have sat with people in the National Science Foundation and other agencies and have coordinated our programs.

Mr. ROONEY. How do you feel about the Library of Congress sending scientists overseas?

Dr. BRODE. I do not see that it is in conflict with our program.

Mr. ROONEY. It would be a good thing; would it?

Dr. BRODE. Yes.

PRESENT STAFF

Mr. ROONEY. Did I understand correctly that you do not have anyone in the field yet?

Dr. BRODE. We do not have.

Mr. ROONEY. How many people have you had in this program in Washington since its inception?

Dr. BRODE. They are gradually coming in. We have seven now on the staff.

Mr. ROONEY. When did the first one come in?

Dr. BRODE. The first one has been here all during this year, since I came in.

Mr. ROONEY. The fiscal year?

Dr. BRODE. Yes; the fiscal year.

Mr. ROONEY. And they have not been out of the country yet?

Dr. BRODE. This is only one person out of the whole organization. This man is not a scientist. He is an administrative officer. It is his job to assist in the organization and development of the program which led to my recruitment.

Mr. ROONEY. Thank you, Doctor.

DISARMAMENT ACTIVITIES

The next phase of the $854,000 bulk item is in connection with, as it says at page 1 of these justifications, "Disarmament activities which have recently been transferred to the Department of State."

Who will address us on that?

Mr. HALL. Mr. Farley.

Mr. FARLEY. Mr. Chairman, I do not have a prepared statement.

The principal responsibility for disarmament until April 1 of this year was fixed in the White House in Governor Stassen. With his resignation, the responsibility was transferred to the Department of State and it is there being divided between Ambassador Wadsworth, who retains his position as deputy United States representative to the United Nations, but also serves as United States representative for disarmament negotiations. Responsibility for backing him up, for development of policy and other activities Governor Stassen carried on, has been transferred to my office. So that the additional funds requested here of $159,000 arise directly from this transfer to the State Department of responsibilities hitherto carried on in the White House.

Mr. ROONEY. Do you have any idea what accomplishments, if any, the Stassen disarmament organization had?

Mr. FARLEY. Governor Stassen was brought in initially to undertake a thorough review of the United States disarmament policy which has developed along one line from about 1946 to 1954. He developed and obtained the approval of the President for a new statement of policy, presented that quite extensively in the meetings of the Disarmament Subcommittee in London last year, and the positions

which he supported there were essentially those that met the overwhelming majority support of the United Nations General Assembly last fall, and are still the basis for our policy.

POLICY ON DISARMAMENT

Mr. ROONEY. Would you briefly tell us what is the policy on disarmament?

Mr. FARLEY. Surely. The United States basic policy on disarmament is to see what possibilities there are of meeting the national security interests of the United States, not through a continued arms race, but by an effectively safeguarded and fair agreement for the control and eventual reduction of armaments. To that end we try to focus on the five principal parts of the Armed Forces. We try to see to what extent nuclear weapons stockpiles can be reduced and turned to peaceful uses. If this is done, we are ready to agree to a stoppage of nuclear tests. We propose also to set up zones against surprise attacks so that there will be less possibility of a war breaking out through surprise attacks.

We propose as part of this package, also, gradual and fair reduction of conventional forces and conventional armaments. Finally we propose that there be a concerted effort through the United Nations to see if it is possible to bring the new guided and ballistic missiles under a control which will remove the threat of instantaneous mass attack. Those are the five principal areas.

Mr. ROONEY. Was that the policy in effect on the 1st of April?

Mr. FARLEY. This year?

Mr. ROONEY. Yes.

Mr. FARLEY. Essentially.

STASSEN ORGANIZATION

Mr. ROONEY. How many people were with the Stassen setup as of that time?

Mr. FARLEY. Approximately 45. I say "approximately" because it was in a state of transition.

Mr. ROONEY. How were they set up?

Mr. FARLEY. They consisted, I would say, of three principal groups. He had a group of 1 or 2 officers assigned to him from each of the principal agencies of the executive branch that have an interest in disarmament. There was 1 from the AEC, 2 from the Defense Department, 1 from the CIA, and 1 from USIA. There were a total, I think, of 10 of those. In addition there were some 4 principal officers including himself, Amos Peaslee, and 2 others who were directly assigned in the White House. There was a supporting group which worked on such matters as answering inquiries from the public, preparation of visual aids, and all the supporting activities of this sort.

Mr. ROONEY. What was the budget immediately before April 1, 1958?

Mr. FARLEY. The total obligations for the Stassen staff in the period up to April 1, 1958, for that fiscal year were $275,000.

Could I say by way of addition, Mr. Chairman, that since the State Department had an interest in disarmament, even during the period Governor Stassen had prime responsibility, we had people assigned

to this. Our level of expenditure was $44,326, which was the amount we had programed for fiscal 1959 in preparing this budget before we knew we were to take on the other responsibility that had been discharged by the White House.

Mr. ROONEY. How much money was transferred as of April 1 in connection with the dissolution of the Stassen organization and the setting up of this one?

Mr. HALL. There was no transfer from the White House.

Mr. ROONEY. Would you be able to tell us what was reduced in the White House request for 1959 in connection with this particular item?

Mr. HALL. I understand the amount requested for the Stassen staff was budgeted for other White House activities and special projects. The payment was from the President's special fund. We are not familiar with the details of that. There has been no comparative transfer from that fund.

Mr. ROONEY. Would it not be in the budget?

Mr. HALL. The details of the White House fund?

Mr. ROONEY. Yes.

Mr. HALL. No, sir. An enumeration is given to the committee, I believe, as some of the accounts are classified. We do not have that detail.

Mr. ROONEY. All these budgets are made up by the fall of the last year?

Mr. HALL. Yes, sir.

Mr. ROONEY. And at that point, since this was not decided on until April, there must have been money in the budget for the continuance of the Stassen organization?

Mr. HALL. My understanding is—and this is third hand as far as I am concerned—that it was anticipated that this activity would be transferred to another agency before the end of the fiscal year, but the decision to transfer was not made until April 1, and we had no definite word on it until after we had been heard by the committee.

Mr. ROONEY. In any event, there has been no transfer of funds from anywhere to the State Department for this activity?

Mr. HALL. No, sir.

JUSTIFICATION MATERIAL

Mr. ROONEY. We shall at this point in the record insert pages 25, 26, and 27 of the justifications.

(The material referred to follows:)

DISARMAMENT PROGRAM—DOMESTIC

Executive direction and policy formulation—Office of Secretary and Staff, domestic

Unit	Present program in 1959 budget			Total requirement 1959			Supplemental requirement		
	Positions	Grade	Annual rate or amount	Positions	Grade	Annual rate or amount	Positions	Grade	Annual rate or amount
The Secretary:									
Special Assistant for Disarmament and Atomic Energy:									
Foreign affairs officer	1	GS-14	$10,320	3	GS-14	$30,960	2	GS-14	$20,640
Do	2	GS-13	17,980	2	GS-13	17,980	------	---------	--------
Do	1	GS-11	6,390	1	GS-11	6,390	------	---------	--------
Personal assistant	------	---------	--------	1	GS-11	6,390	1	GS-11	6,390
Documents records analyst.	------	---------	--------	1	GS-7	4,525	1	GS-7	4,525
Secretary	------	---------	--------	1	GS-7	4,795	1	GS-7	4,795
Do	1	GS-5	3,940	2	GS-5	8,420	1	GS-5	4,480
Clerk-stenographer	1	GS-4	3,415	2	GS-4	6,830	1	GS-4	3,415
Total Office of Secretary and Staff.	6	---------	42,045	13	---------	86,290	7	---------	44,245
Bureau of Intelligence and Research, domestic:									
Division of Functional Intelligence: Intelligence research officer.	------	---------	--------	1	GS-13	9,205	1	GS-13	9,205
Total permanent positions and annual rate.	6	---------	42,045	14	---------	95,495	8	---------	53,450

Object classification	Miscellaneous salary and nonsalary obligations					
	Present program in 1959 budget		Total requirement, 1959		Supplemental requirement	
	Man-years	Amount	Man-years	Amount	Man-years	Amount
01 Personal services:						
WAE employment	----------	----------	1.5	$19,000	1.5	$19,000
Overtime and holiday pay	----------	$500	----------	2,000	----------	1,500
Total, personal services	----------	500	1.5	21,000	1.5	20,500
02 Travel	----------	----------	----------	10,000	----------	10,000
06 Printing and reproduction	----------	----------	----------	750	----------	750
07 Contractual services	----------	----------	----------	70,000	----------	70,000
08 Supplies and materials	----------	----------	----------	500	----------	500
09 Equipment	----------	----------	----------	2,000	----------	2,000
11 Contribution to civil service retirement fund	----------	2,675	----------	6,075	----------	3,400
Total, nonsalary obligations	----------	2,675	----------	89,325	----------	86,650
Grand total, obligations	----------	3,175	----------	110,325	----------	107,150

Disarmament program—Distribution of positions between officers and clerks

Unit	Present program in 1959 budget			Total requirement, 1959			Supplemental requirement		
	Officers	Clerks	Total	Officers	Clerks	Total	Officers	Clerks	Total
Special Assistant for Disarmament and Atomic Energy	4	2	6	8	5	13	4	3	7
Division of Functional Intelligence				1		1	1		1
Total	4	2	6	9	5	14	5	3	8

PARTICIPATION BY OTHER AGENCIES

Mr. ROONEY. Is it expected that other agencies of Government are going to assign people to this unit in the future?

Mr. FARLEY. That is not expected, Mr. Chairman. We do work with other agencies such as the Department of Defense, AEC, CIA, and USIA, but they do not, and we do not expect they will in the future, assign personnel to work on this staff. It is true when delegations go to represent the United States in meetings such as that held in London last year, the delegation would include personnel assigned from other agencies.

SIZE AND ACTIVITIES OF STASSEN ORGANIZATION

Mr. ROONEY. What was the total largest amount in the Stassen agency including all transfers from other Government agencies?

Mr. FARLEY. I do not know that.

Mr. ROONEY. How big a mission was that?

Mr. FARLEY. I do not know that.

Mr. ROONEY. The figures you gave me was $275,000 and how many people?

Mr. FARLEY. 45.

Mr. ROONEY. 45 people merely included the core of the Stassen organization, is that correct?

Mr. FARLEY. That included also, I think, some individuals assigned to his staff by other agencies.

Mr. ROONEY. Who were reimbursed out of this money?

Mr. HALL. 45 was the actual number payrolled by the Executive Offices, I believe, including clerks and stenographers. In addition there were varying numbers assigned to Governor Stassen from other agencies. That figure went up and down.

Mr. ROONEY. Can you tell us how high it went?

Mr. HALL. I cannot give an accurate figure, but I think it went up to 50 or 60. In London I think he had a maximum of 50 people and he had some in Washington, so I would say in the range of 60 people.

Mr. ROONEY. What were they all doing, briefly?

Mr. FARLEY. Mr. Rooney, that was carried on before I had a continuing interest in disarmament.

Mr. ROONEY. Mr. Hall may be able to tell us.

Mr. HALL. There were a number of activities at that time that were not continuing in nature.

Mr. Rooney. Would it be fair to say that some of the activities are not being carried on because of disagreements between the head of that mission and the State Department?

Mr. Farley. I would think that that is not accurate, that the principal differences—for example, we carry a much smaller Publications Division than Governor Stassen and are not in active negotiation with the Russians.

Mr. Rooney. Was there not a time when there was a sharp difference between the position taken by Governor Stassen and the Department of State?

Mr. Farley. In the formulation of policy there was.

Mr. Rooney. Very sharp; was it not?

All right, you do not need to characterize it.

Any questions, Mr. Clevenger?

Mr. Clevenger. No questions.

East-West Exchange Program

Mr. Rooney. The third phase of this reqeust in the amount of $854,000 is $64,000 under "Salaries and expenses, State, 1959, East-West exchange program."

Who will address himself to that?

Mr. Hall. Mr. Merrill.

Mr. Merrill. Mr. Chairman, I have a short prepared statement. With your permission I would like to read it.

Mr. Rooney. Very well.

Mr. Merrill. The committee will remember that on January 27, 1958, an agreement was concluded with the Soviet Government for a wide exchange of persons and delegations for the calendar years 1958 and 1959. In reaching this agreement, the Department of State was in touch with private industry and nongovernmental institutions as well as other Government departments, all of which would be involved in exchanges with the Soviets. These institutions and agencies were in effect being asked to commit themselves to the expenditure of funds to provide expenses for delegations going to the Soviet Union, as well as certain costs for Soviet delegations in this country. The Department, however, indicated that it would endeavor to supply at least the services of interpreters and tour directors for visting delegations, a service which has, incidentally, been performed by the Department since the inception of the exchange program. As set forth in our original justification, an escort service is essentially directed to securing the objectives of the exchange program as they pertain to Soviet visitors to this country.

As a result of the agreement, which was not envisaged at the time of the original budget request, it is now estimated that the original needs for travel, per diem, and salary costs of tour directors and interpreters amounting to $12,500 would have to be increased considerably. This is not only because of the many more delegations which will come here under the agreement in fiscal year 1959, but also because the average length of tours, which are specified in the agreement, is longer and the size of the delegations greater, thus requiring the services of additional interpreters. For example, at least 8 or 9 Soviet agricultural delegations of between 10 and 15 members will visit this country

between July 1, 1958, and July 1, 1959, for 20 to 25 days each. The Department of Agriculture has estimated that at least nine technical leaders as well as a number of interpreters will be required at an average cost of $1,000 each for salaries, travel, per diem, and so forth. In addition to agricultural delegations, the following Soviet groups are expected to arrive during this same period: Steel, iron ore mining, plastics, petroleum, social security, electronics, reclamation and dams, hydroelectric power, and 5 or 6 medical delegations, for a total under section III of the agreement of 23 delegations. In addition there will be 3 sports groups, 3 cultural delegations, and 6 delegations in the academic field, for a total of 12 delegations. Interpreting services will also be needed for a number of conferences and exhibits display teams, as well as for scientific groups, which, under the agreement, will deliver lectures in medical and agricultural fields. The total of these is approximately 10. The East-West Contacts Staff has estimated that a total of at least 40 Soviet delegations will arrive in fiscal year 1959 under the United States-U. S. S. R. exchange agreement.

It is for that reason that we have asked for an additional amount of money in sum total of $64,000.

Mr. ROONEY. With regard to these groups to which you refer—steel, iron-ore mining, plastics, petroleum, social security, electronics, reclamation and dams, hydroelectric power, medical delegations, sports groups, cultural groups and so forth—are they being brought here under Government programs?

Mr. MERRILL. This is under an Executive agreement with the Soviet Union.

Mr. ROONEY. I guess your answer is "Yes"?

Mr. MERRILL. Yes.

Mr. ROONEY. Are the basic expenses being paid by the United States Government?

Mr. MERRILL. The basic expenses of the missions going to the Soviet Union are not being paid by the United States Government. They are being paid by the industry.

Mr. ROONEY. Are you sending these interpreters overseas?

Mr. MERRILL. No, Mr. Chairman. These are interpreters that we use here in this country.

Mr. ROONEY. That is what I thought. Who pays the underlying expenses of these visiting groups?

Mr. MERRILL. The Soviet groups coming here?

Mr. ROONEY. Yes.

Mr. MERRILL. The Soviet Union does.

Mr. ROONEY. Are we to understand that with regard to all the groups to which you referred that the Soviet Union is paying all the travel expenses?

Mr. MERRILL. Yes, sir.

Mr. ROONEY. The Soviet Union is paying all the hotel expenses, meals, and all other expenses of these visiting groups?

Mr. MERRILL. Yes, sir; with the exception of a very few academic groups.

Mr. ROONEY. Let us leave the "very few academic groups" out of this for the moment. Are we to understand that in connection with the visits in 1959 of these 40 Soviet delegations, technical leaders, groups from steel, iron-ore mining, plastics, petroleum, social security,

electronics, reclamation and dams, hydroelectric power, medical delegations, sports groups, cultural delegations, and so forth, that the only expense to the United States taxpayer will be the amount requested in the instant budget?

Mr. MERRILL. Yes.

Mr. ROONEY. There is no question about that?

Mr. MERRILL. No question with the exception in the academic field IES is furnishing certain expenses.

Mr. ROONEY. Those are beyond those to which I just referred?

Mr. MERRILL. Yes.

Mr. ROONEY. So that we have a clear understanding that these 40 delegations will not cost the American taxpayer more than the $80,600 in this budget?

Mr. MERRILL. Yes, sir.

Mr. ROONEY. It might be well if we inserted page 32 of the justifications at this point in the record.

(The material referred to follows:)

EAST-WEST EXCHANGE PROGRAM—DOMESTIC

Executive direction and foreign policy—Bureau of Public Affairs—Domestic

Object classification	Miscellaneous salary and nonsalary obligations		
	Present program in 1959 budget	Total requirement, 1959	Supplemental request
01 Personal services: Overtime	$600	$600	
Total personal services	600	600	
02 Travel	11,000	44,000	$33,000
07 Contractual services	5,000	36,000	31,000
Total nonsalary obligations	16,000	80,000	64,000
Grand total obligations, East-West exchange program	16,600	80,600	64,000

Mr. ROONEY. I note the additional amount of $64,000 is made up of $33,000 for travel and $31,000 for contractual services. Are we to understand from this that all these people will be contractually employed?

Mr. MERRILL. That is the plan.

Mr. ROONEY. There is not to be a single permanent employee for the State Department?

Mr. MERRILL. No; they are contractual. There are 1 or 2 interpreters from the Department we occasionally use.

Mr. ROONEY. Is this page 32 wrong?

Mr. HALL. No. Those interpreters are already on the payroll. These funds will cover only their travel.

Mr. ROONEY. Paid by IES?

Mr. HALL. No. We have a regular group of Russian interpreters and their travel is charged to this account when they are on that business, but most of these people will be Russian-language people who will be specialists in same field as the visitors.

Mr. ROONEY. Who clears these Russian-language interpreters so far as security is concerned?

Mr. MERRILL. May I go off the record?

Mr. ROONEY. Say something on the record and then you may go off the record.

Mr. MERRILL. They are cleared in the normal way.

Mr. ROONEY. Now you may go off the record.

(Discussion off the record.)

Mr. ROONEY. Thank you, Mr. Merrill.

PAYMENT TO GOVERNMENT OF DENMARK

The next item is entitled, under the Department of State at page 24 of House Document 394, "Payment to Government of Denmark, for Payment of Claims of the Government of Denmark, as Authorized by the Act of June 1958"—it has since become Public Law 85–450, 85th Congress?

Mr. JANDREY. That is right.

Mr. ROONEY. $5,296,302. This bill became law June 6, 1958. Is that correct?

Mr. JANDREY. I think that is the right date.

Mr. ROONEY. This is to carry out the provisions of that law which has been recently passed by both Houses of Congress and signed by the President?

Mr. JANDREY. That is right.

Mr. ROONEY. Do you have a prepared statement?

Mr. JANDREY. I have a short statement which I would like to make.

Mr. ROONEY. Very well.

Mr. JANDREY. Public Law 85–450 authorizes payment of $5,296,302 to the Government of Denmark as full and final settlement in connection with the requisitioning and use by the United States of 40 privately owned Danish ships in World War II. An appropriation in this amount is being requested. This appropriation is required to bring compensation for these Danish ships into line with compensation received by American owners.

Oral arrangements for the taking of the vessels were made early in 1941 by representatives of the Department of State and the Danish Minister (now Ambassador) which included the understanding that the United States would pay compensation for the taking and use of the vessels, equivalent to that which American owners would be entitled to receive for American vessels taken for use. Such compensation includes charter hire for the vessels while in possession and use by the United States, and compensation for title values of those vessels lost.

Acting pursuant to recognized international practice whereby private persons must seek local remedies before resorting to diplomatic intervention by their Government, the owners of the ships through negotiated settlement contracts made in 1946 and two series of suits before the Court of Claims ending in 1952 and 1956, respectively, obtained considerable compensation. This, however, fell short of the amount which is due Denmark under the equal treatment-use compensation formula of the original understanding.

The Government of Denmark, upon the failure of the owners to obtain satisfaction through the above local remedies, intervened to request additional payment pursuant to the original understanding. It has agreed to accept payment of $5,296,302 as full and final settle-

ment of the matter. The $5,296,302 was arrived at by deducting the amount already paid the owners ($35,432,350) from the total amount ($40,728,652) that they would be entitled to on equal treatment-use compensation basis. This remainder is the amount specified in the law.

The appropriation being requested therefore would enable the United States to carry out the understanding reached at the time of taking the ships. Early payment in full of the amount agreed to as a final settlement and authorized in the legislation will remove a long-standing irritant in our relations with Denmark, a country of key importance in the NATO Alliance.

Mr. ROONEY. Mr. Secretary, you would be peculiarly well equipped to acquaint us with this requested appropriation since you served how long in Copenhagen?

Mr. JANDREY. Two years.

Mr. ROONEY. You think it is all right?

Mr. JANDREY. Yes; I think it is in our foreign-policy interest.

Mr. ROONEY. Thank you very much, Mr. Secretary.

Mr. JANDREY. Thank you.

FRIDAY, JUNE 20, 1958.

UNITED STATES INFORMATION AGENCY

EXCHANGE OF EXHIBITS BETWEEN UNITED STATES AND U. S. S. R. ON PEACEFUL USES OF ATOMIC ENERGY

WITNESSES

UNITED STATES INFORMATION AGENCY

ABBOTT WASHBURN, DEPUTY DIRECTOR
WALTER R. ROBERTS, DEPUTY ASSISTANT DIRECTOR, EUROPE
JACK MASEY, PROJECT OFFICER, EXHIBITS DIVISION, INFORMATION CENTER SERVICE
BEN POSNER, BUDGET OFFICER

DEPARTMENT OF STATE

FREDERICK T. MERRILL, DIRECTOR, EAST-WEST CONTACTS STAFF

ATOMIC ENERGY COMMISSION

HOMER B. SEWELL, JR., ASSISTANT DIRECTOR, TECHNOLOGY, OFFICE OF SPECIAL PROJECTS

Mr. ROONEY. The third of these agencies to which the supplemental items refer is the United States Information Agency. This request is the amount of $1,100,000 additional under "Salaries and expenses." This appears at page 9 of House Document No. 394.

JUSTIFICATION MATERIAL

It might be well to insert the entire 16 pages of justifications at this point in the record.

(The material follows:)

H. Doc. 394

United States Information Agency—Salaries and expenses, 1959

Request (for 12 months from July 1, 1958)	$1,100,000
Budget estimate next fiscal year	105,000,000
Employment:	
Average number current appropriation	10,960
Average number 1959 budget estimate	10,961
Actual employment Apr. 30, 1958	10,782

PURPOSE AND NEED FOR SUPPLEMENTAL FUNDS

A supplemental appropriation for fiscal year 1959 in the amount of $1,100,000 is requested for the appropriation "Salaries and expenses, United States Information Agency."

It provides for the construction, operation, and related costs of an exhibition on the peaceful uses of atomic energy to be shown in the Union of Soviet Socialist Republic.

The supplemental requested is to implement paragraph (1), section XIII of the agreement on cultural, technical, and educational exchanges signed by the United States and the Union of Soviet Socialist Republics on January 27, 1958, which states:

"Both sides agree in principle on the usefulness of exhibits as an effective means of developing mutual understanding between the peoples of the United States and the Soviet Union. Toward this end both sides will provide for an exchange of exhibits on the peaceful uses of atomic energy in 1958."

Since agreement on the exchange was reached within a week of the actual signing on January 27, 1958, no provision for this expense was included in the Agency's regular budget estimate for the fiscal year 1959. However, in view of the urgency, importance, and timing of this project, the Agency has already programed $83,000 for the research and design of the exhibition from its regular appropriation for the fiscal year 1958.

A number of exhibit subjects were discussed during the exchange talks held with the U. S. S. R. After considerable discussion, it was finally agreed that exhibits would be exchanged on the peaceful uses of atomic energy.

The United States objective in showing this exhibition

By presenting an exhibition that is impressive to those professionally concerned with atomic energy and comprehensible to the average layman in the U. S. S. R., the Agency hopes to (1) reflect the progress that has been made by the United States in putting atomic energy to work for peaceful purposes, (2) dispel the belief that probably is held among the Soviet Union's citizenry that the United States is entirely preoccupied with developments in destructive applications of atomic energy, and (3) explain how atomic energy is being increasingly channeled into our industrial and social institutions.

Current status of negotiations

Discussions with representatives of the U. S. S. R. at the Soviet Embassy in Washington concerning the implementation of the agreement of exchange of exhibits on the peaceful uses of atomic energy have been harmonious and constructive, with the Soviets having agreed to major aspects of our proposal for showing the United States exhibition in the U. S. S. R., that is, as concerns timing, places of showing, duration of showings. The U. S. S. R. has concurred in our planned proposal to show the exhibition for a month each in Moscow and in Leningrad. Specific sites within the cities are being discussed. In return, the U. S. S. R. has expressed its wish to show its exhibit for a month in New York City and a month in Washington, D. C.

Understanding with other United States Government agencies concerned

The United States Information Agency participated in the negotiations on the subject of exhibit exchanges with the U. S. S. R. After the agreement was signed, the Agency informed the Operations Coordinating Board of the action that was being taken by the United States Information Agency to implement this part of the agreement, and consulted with the Department of State and the Atomic Energy Commission in formulating proposals for the United States exhibition in the U. S. S. R. In a letter to Director of the United States Information Agency, dated April 14, 1958, the Chairman of the Atomic Energy Commission expressed readiness to assist the Agency in preparing the exhibition. Consultations continue between the Agency and the Atomic Energy Commission on the content of the exhibition. It has been established that the United States Information Agency has primary responsibility for the preparation and showing of this exhibition in the U. S. S. R.

Scope and timing

The exhibition will depict to the people of the U. S. S. R. the development in the United States of the various applications of nuclear science and technology for the improved well-being of mankind. It will be designed to appeal to both sophisticated and lay viewers.

Considerable progress has already been made in planning and designing the United States exhibition. While a specific opening date has not been set, we tentatively plan to open our exhibition in Moscow in November, after which the exhibition will be shown in Leningrad.

Basis for estimate

The estimates used are based upon the following factors:

1. While the Agency has not heretofore produced an exhibit for showing in Moscow, some components of this exhibit are comparable to those which have been produced by the Agency in the past. The estimated cost of such components are based upon experience. Other costs are based on discussions with the Agency contractor, Atomic Energy Commission, and packing and shipping experts.
2. The exhibition will occupy approximately 20,000 square feet plus floor space for lecture hall-theater, demonstration laboratory, and storage space.
3. It is expected that the exhibit will be constructed in the United States.
4. Many operating models and much equipment (identified in the detail which follows) will be loaned to the Agency, but will involve cost of packing, shipping, and insurance only.
5. The United States will pay costs incurred in the U. S. S. R. for installation, maintenance, and general labor as well as shipping and incidental costs at the noncommercial conversion rate of 10 rubles to 1 United States dollar. All work performed will be under the supervision of the American managers of the exhibit.

Details of the exhibition and fund requirements are explained in the schedules which follow.

SALARIES AND EXPENSES

For an additional amount for "Salaries and expenses," $1,100,000

Section XIII of the Agreement on Cultural, Technical, and Educational Exchanges signed by the United States and the U. S. S. R. on January 27, 1958, provides for an exchange of exhibits on the peaceful uses of atomic energy in 1958. Purpose of the exhibition, proposed for Moscow and a second major city, will be to depict to the people of the U. S. S. R. the development in the United States of the various applications of nuclear sciences and technologies for the benefit and progress of mankind. This proposed supplemental appropriation is to cover the costs of this country's exhibits in the U. S. S. R.

Program and financing

	In budget	Revised estimate	Difference (+) (−)
Program by activities:			
1. Overseas missions	$43,021,800	$43,021,800	
2. Media services:			
(a) Press and publications service	9,278,400	9,278,400	
(b) Motion-picture service	6,433,700	6,433,700	
(c) Information center service	6,527,600	7,627,600	+$1,100,000
(d) Broadcasting service	19,924,300	19,924,300	
3. Cooperative programs with private organizations	511,600	511,600	
4. Program direction and appraisal	2,665,800	2,665,800	
5. Administration and staff support	5,429,800	5,429,800	
6. Administrative support	11,207,000	11,207,000	
Total obligations	105,000,000	106,100,000	+1,100,000
Financing:			
Appropriation (new obligational authority)	105,000,000	106,100,000	+1,100,000

Object classification

		In budget	Revised estimate	Difference (+) (−)
01	Personal services:			
	Permanent positions	$36,877,675	$36,877,675	
	Positions other than permanent	291,201	461,201	+$170,000
	Other personal services	3,220,998	3,220,998	
	Total personal services	40,389,874	40,559,874	+170,000
02	Travel	4,350,121	4,522,821	+172,700
03	Transportation of things	3,466,005	3,575,247	+109,242
04	Communication services	1,923,598	1,923,598	
05	Rents and utility services	2,745,913	2,907,185	+161,272
06	Printing and reproduction	3,457,269	3,518,769	+61,500
07	Other contractual services	19,253,977	19,679,263	+425,286
	Services performed by other agencies	12,664,618	12,664,618	
08	Supplies and materials	8,032,267	8,032,267	
09	Equipment	3,843,448	3,843,448	
10	Lands and structures	34,948	34,948	
11	Grants, subsidies, and contributions	4,752,150	4,752,150	
13	Refunds, awards, and indemnities	2,649	2,649	
15	Taxes and assessments	83,163	83,163	
	Total obligations	105,000,000	106,100,000	+1,100,000

Summary of requirements

	1959 estimate
A. Construction of exhibit	$292,200
B. Packing, insurance, and shipping expenses	153,028
C. Operating expenses of Moscow showing	340,800
D. Operating expenses of Leningrad showing	252,472
E. Handout materials for Moscow and Leningrad showings	61,500
Total	1,100,000

The details of the estimate are as follows:

A. CONSTRUCTION OF EXHIBIT, $292,200

Physical data

The exhibit is being designed to occupy an area of 20,000 square feet and will be adaptable to a variety of space layouts, will be easily erectable, mountable, and transportable.

The exhibit will be composed mainly of animated three-dimensional models and supporting illustrative material. The latest exhibition techniques and devices will be employed to dramatize and explain a highly technical and complex subject. We propose to install a laboratory demonstration space within the exhibit area to accommodate a maximum audience of 500. The showing of relevant films on the peaceful uses of atomic energy is also contemplated. Plans

call for a minimum of 20 animated 3-dimensional models to be featured in the exhibit. A number of these models will be displayed at the Geneva atomic exhibition in September and will be made available to the Agency on a loan basis by the Atomic Energy Commission upon the closing of the Geneva exhibit. Other models will be provided on a loan basis through direct negotiations with non-Government sources. Some models will be designed and fabricated by the Agency especially for the exhibit.

Construction staff, $41,300

This staff consists of six temporary positions to handle the planning, construction supervision, negotiations with Government and non-Government sources, procurement, transportation, and clerical functions related to the exhibition.

The estimate includes: (1) Temporary employment of 6 employees for 9 months, $32,800, (2) travel and related costs to the U. S. S. R. including per diem for 180 days for the project officer, $5,200; and travel and related costs to the U. S. S. R. including per diem for 90 days for assistant project officer, $3,300.

Preliminary survey team, $5,400

Three Americans will visit the U. S. S. R. (Moscow and Leningrad) to conduct preliminary site survey and handle preliminary arrangements with Embassy and U. S. S. R. officials. They will also visit Geneva to consult with the AEC project manager.

The estimate includes travel and related costs for these Americans including per diem for 10 days.

Construction costs, $245,500

The proposed exhibition will consist of seven sections. Description of each section and estimates of costs are:

Section I. Fundamentals of fission and fusion reactions, $24,230.—Introduction to the exhibition will be an explanation of the fundamental principles of atomic structure, elementary particles and particle interactions leading to energy releases by fission and fusion.

This section will consist of: atomic structure; elementary particles, and heavy nucleus; interactions between neutrons and heavy nuclei; energy balances in fission and fusion; and breeding.

The estimated costs for items in this section are: 6 aluminum structures, $8,000; lighting system, $7,230; 60 plastic shapes ranging from 3 to 12 feet, $6,000; and a small historical exhibit, $3,000.

Section II. Uranium and thorium production, $9,688.—This section will be a small part of the exhibition planned to retain continuity and will show modern ore-processing techniques, and selected topics from nuclear production metallurgy.

The estimated costs for items in this section are: 28 vertical and overhead styrofoam panels with locking and joining devices, $2,120; lighting system, $1,424; and 768 square feet of graphics, at $8 per foot, $6,144.

Section III. Reactors, $104,379.—This section will focus attention on advanced power reactors which are being developed successfully in this country. Examples of these are: the new Shippingport pressurized water reactor; liquid metal fuel reactor; organic moderated reactor; sodium-graphite reactor; homogeneous reactor; and experimental breeder reactor. The section will also show, in a separate unit, the specialized use reactors such as, Argonaut testing and research reactor; Brookhaven National Laboratory medical reactor. The models required for this section will be loaned by the Atomic Energy Commission from the Geneva exhibit; loaned from non-Government sources; and fabricated by the Agency. A list of the equipment models and sources follows:

Models to be loaned by Atomic Energy Commission:

1. Engineering test reactor (ETR).
2. Argonne experimental breeder reactor (EBR II).
3. Homogeneous reactor experiment II (HRT).
4. Sodium reactor experiment (SGR).
5. Shippingport pressurized water reactor.

Models to be obtained from non-Government sources:

1. Materials test reactor (MTR).
2. Argonaut reactor.
3. Medical research reactor (BNL).

Models to be fabricated, cost included in the estimates:

1. Organic moderated reactor experiment (OMRE), $25,000
2. Liquid metal fuel reactor (LMFR), $10,000
3. Simulated reactor interior, $25,000
4. Pickle barrel reactor, $10,000

The estimated costs for items in this section are: scale models to be fabricated by the Agency, $70,000; 672 square feet of graphics at $8 per square foot, $5,376; 6 translucent fabric umbrellas 24 foot diameter, $3,000; 6 panelled aluminum supporting columns, 14 feet high, $6,000; coordinated lighting system, $9,030; 6 tape or wire recorder systems, $7,200; and 50 styrofoam panels, three-dimensional assemblies and display platform, $3,773.

Section IV. Fuel processing and waste disposal, $9,688. This section will illustrate in pictorial form selected topics on concentration of high level wastes and recent advances in pyrometallurgical techniques for fuel processing.

The estimated costs for items in this section are: 768 square feet graphics at $8 per square foot, $6,144; wiring and lighting, $1,424; and 28 interlocking panels 4 feet by 8 feet, $2,120.

Section V. Isotopes and radiation, $52,162.—This section will consist of (a) production and handling of radioisotopes as research tools in basic science—biochemistry, biology, and genetics: agriculture, analytical chemistry, physiology, pharmacology, metallurgy; and (b) applied use of radioisotopes in the fields of industry, medicine, and agriculture.

This section will include the the following models:

Models loaned by Atomic Energy Commission:

1. Carbon cycle
2. Biosynthesis of C–14 labeled plant and animal products
3. Intermediary metabolism in the dairy cow
4. Diagnosis of heart anomalies
5. Chromosome duplication
6. Metabolic pathways of a C–14 carcinogens

Models from non-Government sources:

1. Neutron activation analysis
2. Localization of human tumors using radioisotopes

Models to be fabricated—cost included in the estimates:

1. Brookhaven National Laboratory "hot form," $8,310
2. Food irradiation plant, $10,000

The estimated cost of items in this section are: scale models to be fabricated by the agency, $18,310; 864 square feet of graphics at $8 per square foot, $6,912; circular lighting system, $13,960; and panels, tubes, fastening system, platform, and silk screen lettering, $12,980.

Section VI. Challenges of the future, $9,688.—In view of the great interest in thermonuclear power such information as has been declassified will be included. This section will include peaceful uses of the atom: electric power; mining; excavating harbors and canals; seismology; transportation (air, sea, rail and automobile); direct conversion of fission energy into electrical energy.

The costs are: 768 square feet of graphics, at $8 per square foot, $6,144; wiring and lighting, $1,424; and 28 interlocking panels 4 feet by 8 feet, $2,120.

Section VII. International aspects of United States atomic energy program, $35,665.—This section will show the degree to which the United States is cooperating with other countries in the development of peaceful uses of atomic energy. Graphically displayed will be: (1) Argonne International School of Nuclear Science; (2) Foreign scholars in the national laboratories; (3) Inter-American symposium at Brookhaven National Laboratory; (4) United States research reactors abroad; and (5) United States as a source of fissile and fertile materials for peaceful uses.

The estimated costs for items in this section are: 804 square feet of graphics, at $8 per square foot, $6,610; 3-dimensional world map, 16 feet in diameter on platform, $8,000; lighting system, $5,025; 48-foot superstructure and supporting trusses, $12,000; 48 triangular skin panels, $3,000; other panels, $1,030.

B. PACKING, INSURANCE AND SHIPPING EXPENSES, $153,028

The estimate provides for drayage and shipments of exhibition material from the United States and Geneva, Switzerland to Moscow, to Leningrad and return to the United States or other destinations. A summary of the expenses are as follows:

1. Moscow showing:	
(*a*) Cost of packing and crating of 22,524 cubic feet of materials	$33,786
(*b*) Drayage costs in the United States	3,040
(*c*) Ocean freight—New York to Helsinki ($1.45 per cubic foot for 22,524 cubic feet)	32,660
(*d*) Rail shipment—Helsinki to Moscow	4,200
(*e*) Drayage costs in Geneva	65
(*f*) Rail shipment—Geneva to Moscow	909
(*g*) Drayage costs—Moscow (railhead) to and from exhibit site	1,060
(*h*) Insurance on privately owned equipment borrowed for the exhibit	10,000
(*i*) Shipment of handout material	10,000
(*j*) Emergency air shipments of materials—United States to Moscow	5,000
Subtotal, Moscow	100,720
2. Leningrad showing:	
(*a*) Rail shipment—Moscow to Leningrad	3,150
(*b*) Drayage costs—Leningrad (railhead) to and from exhibit site	1,060
(*c*) Emergency air shipment of materials—United States to Leningrad	3,000
(*d*) Rail shipment—Leningrad to Helsinki	1,830
(*e*) Ocean freight—Helsinki to New York (Assumes approximately 75 percent of exhibit sent from United States and Geneva will be returned to the United States)	29,851
(*f*) Ocean or rail shipments—Helsinki to other European posts	7,417
(*g*) Return of materials to lenders in United States	6,000
Subtotal, Leningrad	52,308
Total	153,028

C. OPERATING EXPENSES OF MOSCOW SHOWING ($340,800)

1. Staff and travel expenses, $150,800

All installation work, general labor, watchmen and custodial help will be Soviet nationals working under the supervision of American staff who will manage the exhibition.

(*a*) American staff	$129,574
(1) Exhibit manager and supporting staff:	
Temporary employment of 4 Americans for 120 days	11,086
Travel and related costs for 4 Americans including per diem for 90 days	13,200
Total	24,286
(2) Scientist, guides staff (for lectures):	
Temporary employment for 40 days of 30 Americans; 10 having doctorates in physics and 20 to serve as lecturing guides	36,288
Travel for these employees including per diem	69,000
Total	105,288

(*b*) Soviet nationals staff	$21,226
The following estimates are based on communications from the U. S. Embassy, Moscow:	
4 carpenters, at $168 per month, for 75 days each	1,680
4 electricians, at $199 per month, for 75 days each	1,990
5 laborers at $163 per month, for 75 days each	2,037
3 sign painters, at $221 per month, for 60 days each	1,326
4 cleaners, at $147 per month, for 75 days each	1,470
8 guards, at $189 per month, for 75 days each	3,780
1 clerical assistant, at $175 per month, for 75 days each	437
2 telephone operators, at $175 per month, for 75 days each	875
2 receptionist, at $175 per month, for 35 days each	409
4 drivers, at $189 per month, for 75 days each	1,890
20 guides, at $200 per month, for 40 days each	5,332
Total (57)	21,226

2. Rental of space; and operation, and maintenance of exhibit, $190,000

The estimate is based on securing a downtown location in Moscow. Based upon Embassy recommendations, space has been proposed at Manezhe Square in Moscow. According to the Embassy, Manezhe has excellent exhibition accommodations as well as a desirable central location.

The estimate also provides for operating and maintenance costs of the exhibit including alterations for wiring, local purchase of material, electrical power, communications, and rental of automotive equipment.

D. OPERATING EXPENSES OF LENINGRAD SHOWING, $252,472

1. Staff and travel expenses, $145,200

All installation work, general labor, watchmen, and custodial help will be Soviet nationals working under supervision of American staff who will manage the exhibition.

(*a*) American staff	$123,974
(1) Exhibit manager and supporting staff:	
Temporary employment of 4 Americans for an additional 120 days	11,086
Travel and related costs of 4 Americans including per diem for 90 days	7,600
Total	18,686
(2) Scientist, guides staff (for lectures):	
Temporary employment for 40 days of 30 Americans, 10 having doctorates in physics and 20 to serve as lecturing guides	36,288
Travel for these employees, including per diem	69,000
Total	105,288
(*b*) Soviet nationals staff	21,226
The following estimates are based on communications from the United States Embassy, Moscow:	
4 carpenters, at $168 per month, for 75 days each	1,680
4 electricians, at $199 per month, for 75 days each	1,990
5 laborers, at $163 per month, for 75 days each	2,037
3 sign painters, at $221 per month, for 60 days each	1,326
4 cleaners, at $147 per month, for 75 days each	1,470
8 guards, at $189 per month, 75 days each	3,780
1 clerical assistant, at $175 per month, for 75 days	437
2 telephone operators, at $175 per month, for 75 days each	875
2 receptionists, at $175 per month, for 35 days each	409
4 drivers, at $189 per month, for 75 days each	1,890
20 guides, at $200 per month, for 40 days each	5,332
Total (57)	21,226

2. Rental of space; and operation and maintenance of exhibit, $107,272

The estimate is based on securing a downtown location in Leningrad. Based upon Embassy recommendations, we are considering the use of space at the Hermitage Museum. According to the Embassy, several wings of the Hermitage are being redone to provide better exhibition space.

The estimate also provides for operating and maintenance expenses of the exhibit including alterations for wiring, local purchase of material, electrical power, communications, and rental of automotive equipment.

E. Handout Material, $61,500

It is planned to distribute a minimum of 500,000 copies of a pictorial publication to provide the audience with a takehome reminder of the exhibition. Costs for printing are estimated as follows:

(1) 50,000 copies, at 15 cents each	$7,500
(2) 450,000 copies, at 12 cents each	54,000
Total	61,500

Mr. Rooney. Do you have a general statement with regard to this?

Mr. Washburn. Yes, Mr. Chairman.

Mr. Rooney. Please proceed.

General Statement

Mr. Washburn. On January 27, 1958, the United States and the Soviet Union signed an agreement providing for certain cultural, technical, and educational exchanges between the U. S. S. R. and the United States of America. This agreement followed lengthy negotiations here in Washington between Soviet Ambassador Zaroubin and Ambassador Lacy for the Department of State. One of the provisions of this agreement called for the exchange in 1958 of exhibits on the peaceful uses of atomic energy.

Since the President's budget was submitted to the Congress prior to the conclusion of these negotiations with the Soviets, no provision was made in the 1959 budget for the expense of mounting in the Soviet Union this United States exhibit on the peaceful uses of the atom. The request for $1,100,000 which you are now considering covers the cost of this exhibit.

The United States Information Agency has been assigned responsibility for preparing and showing the exhibit in the Soviet Union. It will be the first official exhibition that our Government has ever presented in the Soviet Union.

It should be as effective as we can possibly make it. It will show for 1 month in Moscow and 1 month in Leningrad. By reciprocal arrangement the Soviets are planning to have their atoms-for-peace exhibit for 1 month in New York and 1 month in Washington.

We are planning the type of exhibit that will be comprehensible and interesting to the average layman in the Soviet Union. By so doing, the United States hopes (1) to reflect the progress that has been made in this field by American scientists, (2) to dispel the belief spread by Communist propaganda that the United States is preoccupied solely with the destructive capabilities of atomic energy, and (3) to explain how atomic energy is being applied increasingly in the fields of medicine, industry, and agriculture—not only in the United States but in other countries which share the benefits of American progress in atomic research.

In view of the requirement that the exhibition take place in calendar year 1958, the Agency has already programed $83,000 for resesarch and design from its regular appropriation for fiscal year 1958. We have the full cooperation of the Atomic Energy Commission, and are working closely with them in all our planning.

The Information Agency has carefully considered the costs involved. The figures included in this supplemental request for $1,100,000 are as accurate as it is possible for us to make them.

With us are Mr. Sewell of the Atomic Energy Commission, and Mr. Merrill of the Department of State, to assist in answering the questions of the committee. Also, Mr. Masey, the USIA exhibits project officer in charge, is here to answer questions on the proposed content and design of the exhibit.

Mr. ROONEY. You have not given us very much information, have you?

Mr. WASHBURN. We hope to provide more information from the men here.

FIRMNESS OF COMMITMENTS

Mr. ROONEY. In view of what happened within the past year with regard to the proposed trade fair in Gorki Park, Moscow, I am prompted to inquire how firm are the agreements and commitments with the Soviet Union in connection with the expenditure of this substantial sum of money, $1,100,000?

Mr. MERRILL. I believe this is a firm commitment. It is provided for in an executive agreement. I do not believe the Soviets will violate this agreement in this respect. I am having conversations with the counselor of the Soviet Embassy regarding this Soviet exhibit, and he informs me he expects to have this exchange, and only the dates remain to be decided.

Mr. ROONEY. That is about the same kind of information we had a year ago when we appropriated $2,200,000 for a trade fair in Gorki Park which has never been held.

Mr. MERRILL. That, of course, sir, was not an exchange; this is an exchange.

Mr. ROONEY. What is the quid pro quo?

Mr. MERRILL. That there shall be an American exhibit in 2 cities in the Soviet Union for a period of 1 month each.

RUSSIAN EXHIBITS IN THE UNITED STATES

Mr. ROONEY. What are you giving the Russians?

Mr. MERRILL. We are permitting them to exhibit here.

Mr. ROONEY. Where?

Mr. MERRILL. In Washington and in New York.

Mr. ROONEY. What kind of exhibitions?

Mr. MERRILL. The same thing—an exhibit on the peaceful use of atomic energy.

Mr. ROONEY. And have you indicated when you are going to permit them to exhibit in Washington and in New York and for how long?

Mr. MERRILL. Yes, sir.

Mr. ROONEY. When and for how long?

Mr. MERRILL. The probability is that the Soviet exhibit will be at the Coliseum in New York in February 1959 and in Washington the following month.

UNITED STATES EXHIBIT IN RUSSIA

Mr. ROONEY. If we have that information so far as what the Soviets are going to do here in the United States, why do we not know when and where you are going to exhibit in Soviet Russia?

Mr. MERRILL. I believe we do know the approximate date. It will be relatively the same time.

Mr. ROONEY. Where?

Mr. MERRILL. The sites of the exhibits in the Soviet Union are still being negotiated.

Mr. ROONEY. How is it we always seem to lag behind in any sort of an understanding, agreement, or pact with the Soviets? We have already been committed as to dates and places, and I take it as to all other details. Why do we not have the same situation insofar as they are concerned?

NEGOTIATIONS FOR COLISEUM IN NEW YORK

Mr. MERRILL. They have as yet not signed the contract for the coliseum. It is still in the negotiating stage.

Mr. ROONEY. What sort of contract are they contemplating, if you know, for the Coliseum?

Mr. MERRILL. They will sign the usual contract that the coliseum requires at the usual cost per square foot.

Mr. ROONEY. What is that?

Mr. MERRILL. I believe the total cost—and I am subject to correction——

Mr. ROONEY. That is what I am trying to get at.

Mr. MERRILL. Is $30,000——

Mr. MASEY. I believe the cost is about $122,000.

Mr. ROONEY. For how long?

Mr. MASEY. For a 10-week period.

Mr. ROONEY. How long will they be in Washington?

Mr. MERRILL. A month.

ADMISSION FEES

Mr. ROONEY. Are they going to charge admission?

Mr. MERRILL. I do not believe so.

Mr. ROONEY. Are we going to charge admission in Russia?

Mr. MERRILL. No, sir.

Mr. ROONEY. Are you quite sure they are not going to charge admission?

Mr. MERRILL. We will see in firming up the negotiations still in progress that the reciprocity is the same. If we do not charge admission in the Soviet Union they will not charge admission here.

PROPOSED LOCATION OF UNITED STATES EXHIBIT

Mr. WASHBURN. The Embassy's recommendation on locations in Moscow and Leningrad are included at pages 14 and 15 of the justifications. According to the Embassy, Manezhe Square in Moscow and Hermitage Hall in Leningrad.

SITE FOR WASHINGTON EXHIBIT

Mr. ROONEY. Where in Washington would this be held?

Mr. MERRILL. In the armory.

Mr. ROONEY. You missed the point, Mr. Washburn. Here we have committed ourselves insofar as the coliseum in New York is concerned, and the armory in Washington is concerned, but we merely have suggestions from our Embassy in Moscow.

Mr. MERRILL. These are the suggestions that we have made to them. There is no commitment to give them the armory or the coliseum.

GORKI PARK TRADE FAIR

Mr. ROONEY. This business may turn out like the fair at Gorki Park. Is that possible?

Mr. MERRILL. I do not believe so, sir, because this is an exchange. They also have an interest in exhibiting here. In the case of the fair at Gorki Park it was not an exchange.

Mr. ROONEY. By the way, what has happened to the private Gorki Park trade fair and that gentleman who had the contract with the Soviet Chamber of Commerce under which he was to put up a substantial amount of money by one day last week? Does anyone know?

Mr. MERRILL. I do not believe we know whether he is going to be successful or not as of today.

REQUIREMENT FOR PERSONAL SERVICES

Mr. ROONEY. Included in this request for $1,100,000 we find personal services in the amount of $170,000. Why should this amount not be absorbed by the United States Information Agency?

Mr. POSNER. The personal services included in this estimate will be over and above those in the regular appropriation for the Agency.

Mr. ROONEY. How much is your total appropriation?

Mr. POSNER. For this year it is $95,100,000.

Mr. ROONEY. Why could you not absorb this $170,000 out of that?

Mr. POSNER. The largest portion of this, sir, will be for scientists and the guide staff which will be exclusively for the conduct of this exhibit in Moscow. They will be completely separate from anything that the Agency is doing. The costs could be absorbed, but they would have to be absorbed by the Agency's reducing its other programs accordingly.

Mr. ROONEY. In the coming fiscal year, in the ordinary course of things, your appropriation "Salaries and expenses," will be somewhere between the House figure of $97 million and the figure of the other body, $100 million. With such a huge and substantial appropriation as that, why throw in here $170,000 rather than absorb it?

Mr. POSNER. I think, sir, the appropriation request was presented without any reference to the particular activity we are discussing.

1959 ESTIMATE FOR EXHIBITS PROGRAM

Mr. ROONEY. How much is included in the 1959 regular budget for the exhibit programs?

Mr. POSNER. The total cost of exhibits in the 1959 budget of $105 million, including the construction costs in Washington and the operation of all exhibits in all of our 200 posts, is $2.1 million.

SURVEY TEAM TO MOSCOW

Mr. ROONEY. By the way, did anybody take a trip from Washington to Moscow in connection with this, and if so, did they discuss the matter with any Russians?

Mr. MASEY. No, sir.

Mr. ROONEY. The answer is "No trip"?

Mr. MASEY. No trip as yet has been made.

Mr. ROONEY. If these negotiations, Mr. Merrill, have reached the point that you indicate, why is it necessary to have a preliminary survey team, as described in the justifications, visit Moscow and Leningrad to conduct preliminary site surveys and handle preliminary arrangements with Embassy and U. S. S. R. officials?

Mr. MASEY. The showing time of these exhibitions has not yet been fixed and it is conceivable that we might show earlier than February in Moscow; consequently, a field trip would have to be made as soon as possible to examine the site and discuss matters with the Embassy personnel as well as with the Soviet officials.

EMPLOYMENT OF SOVIET NATIONALS

Mr. ROONEY. How many Russians will we put on the payroll?

Mr. MASEY. Fifty-seven, sir.

Mr. WASHBURN. That is for each city.

Mr. MASEY. Fifty-seven for each city; yes, sir.

Mr. ROONEY. And we are going to have a Russian receptionist at these exhibits?

Mr. MASEY. Yes, sir.

Mr. ROONEY. Are we going to have Russian telephone operators?

Mr. MASEY. Yes, sir.

Mr. ROONEY. Russian guards?

Mr. MASEY. That is correct, sir.

Mr. ROONEY. Are we going to clear these people insofar as giving us a fair shake of the dice is concerned? No answer? I think that I could hear a pin drop here.

Mr. WASHBURN. Will that be under a reciprocal type of arrangement?

Mr. ROONEY. Do you not understand we Americans do things a little differently than they do?

Mr. WASHBURN. Yes, sir.

Mr. ROONEY. Do you not understand—the question is withdrawn, there is no sense in pursuing it any further.

How are we going to get these people? Are we going to the Communist Party in Moscow and ask them to give us the guards and the telephone operators and two receptionists? How does this work out?

Mr. WASHBURN. We would be relying on the Embassy to advise and guide us on those details, sir.

Mr. ROONEY. Between the 114 people they could louse everything up pretty well: could they not?

Mr. WASHBURN. Yes; it would be possible.

Mr. ROONEY. Where did these figures come from? For instance, a Russian carpenter would get but $21 a month more than a cleaner, and a Russian carpenter would get $7 a month less than a telephone operator. Where did you get these figures?

Mr. ROBERTS. These figures were contained in a telegram that we received from Moscow.

Mr. ROONEY. Do you have the telegram here?

Mr. ROBERTS. Yes sir [handing].

Mr. ROONEY. You would not have any idea as to why a telephone operator would get more money than a carpenter?

Mr. ROBERTS. No; I would not.

Mr. ROONEY. She might be in a position to do better by way of good Communist results than a carpenter?

Mr. ROBERTS. They probably would also have to know English as well as Russian.

DURATION OF EXHIBITS

Mr. ROONEY. Have they indicated what length of time the exhibits would last in these two cities in the Soviet Union?

Mr. ROBERTS. One month each, sir.

Mr. ROONEY. We would send ours over there for 1 month in Moscow and a month in Leningrad, whereas, if I understood this young gentleman correctly a while ago, the Russians would exhibit for 10 weeks in the coliseum in New York and 10 weeks in the armory in Washington.

Mr. ROBERTS. That is not my understanding.

Mr. ROONEY. What is your understanding?

Mr. ROBERTS. One month. Complete reciprocity, 1 month in New York, 1 month in Washington; 1 month in Moscow and 1 month in Leningrad.

Mr. ROONEY. Where did you get the figures?

Mr. MASEY. The 10-week period covers 4 weeks for installation, 4 weeks of actual showing time, and 2 weeks for dismantling, both in the United States and in the Soviet Union.

GORKI PARK SITE

Mr. ROONEY. Is it possible that our place of exhibit in Moscow would be in Gorki Park?

Mr. WASHBURN. Not at that time of the year, Mr. Chairman. That is a sort of Coney Island situation. It is open in the summer.

Mr. ROONEY. This surely does not represent the last word on this matter, does it—this telegram of March 18?

Mr. ROBERTS. No, sir.

Mr. ROONEY. As I recall in connection with the proposed Gorki Park trade fair, the trade fair visitors were to be charged an admission fee; is that right?

Mr. POSNER. As I recall, there was no charge to the particular proposed trade fair. There was reference to a charge which is made for people to enter Gorki Park itself.

Mr. ROONEY. Yes, and that limits those who would go to a trade fair if one were going to be held; would it not?

Mr. POSNER. Yes, sir.

Mr. ROONEY. Can you tell us whether or not you are going to agree to any such proposition as that—the use of Gorki Park?

Mr. MERRILL. If Gorki Park should be found to be a suitable site, we would presume they would have to discuss that point with the Soviets. Actually, the 1 ruble admission, I believe, does not cut down attendance in Gorki Park. There are thousands and thousands of people going there all the time. If it were held out of season in February, I believe we would be justified in asking the Soviets to waive the usual ruble admission fee which in the summertime does give the entrant a certain amount of right to the facilities of the park itself. It would be closed during the early spring months.

Mr. ROONEY. How do you pronounce the other location?

Mr. ROBERTS. Manezhe.

Mr. ROONEY. If the exhibit were held there it would seem that the attendance would be the difference between 150,000 in Gorki Park and 250,000 there; is that right?

Mr. MERRILL. You are correct, sir.

Mr. ROONEY. In view of that, and in view of the fact that Gorki Park, as I recall from the testimony last year concerning the proposed trade fair, is only open in the summer months of the year, in July and August, as I recall——

Mr. MERRILL. That is right.

Mr. ROONEY. Is it possible that you would agree to hold this there?

Mr. MERRILL. I went there in April last year and there were a great many people in the park at that time. If held in the seasonal weather, March or April, the location is very accessible. There is that to its advantage.

COST OF EXHIBIT IN GORKI PARK

Mr. ROONEY. What would be the total cost if the exhibit were to be set up in Gorki Park?

Mr. MASEY. That would depend. If we would have to put up a pavilion we would have to budget additional money for a pavilion.

Mr. ROONEY. Beyond the $1,100,000?

Mr. MASEY. Yes, sir.

Mr. WASHBURN. There are buildings there.

Mr. ROONEY. Why did you not have a direct answer a while ago to the question—is it possible you would agree to hold it in Gorki Park in view of these things?

Mr. MERRILL. I believe that is why the survey team would have to go, to decide if the site is adequate.

Mr. ROONEY. Is this not something that should be very promptly and expeditiously disposed of in conversations in, say, the next 24 hours? Why does it take so much time? We have already com-

mitted ourselves to the coliseum and the armory, the dates and so forth.

MANEZHE SITE

Mr. MERRILL. We have asked the Soviet Embassy, about 2 weeks ago, if we could have the Manezhe site, and they have not replied as yet. That was only 2 weeks ago.

Mr. ROONEY. Why do you not take the position—we are not going to exhibit in Gorki Park?

Mr. MERRILL. I believe that we could, sir.

Mr. ROONEY. Do you intend to?

Mr. MERRILL. I think that will depend on their reply as to whether Manezhe is available and suitable.

COST OF EXHIBIT IN GORKI PARK

Mr. ROONEY. I come back to a question that remains unanswered. How much will this whole exhibit cost in Gorki Park for 1 month?

Mr. MASEY. If it were to be exhibited in an existing building it would cost the amount of this appropriation.

Mr. ROONEY. How much, for the record?

Mr. MASEY. Well, $1,100,000.

Mr. ROONEY. Is not the $1,100,000 for 2 exhibitions?

Mr. MASEY. Yes. There would be an exhibit in Gorki Park and Leningrad.

Mr. ROONEY. I am trying to find out how much it would be for Gorki Park.

Mr. MASEY. It would be approximately $340,800.

Mr. ROONEY. It is more than that.

Mr. POSNER. As I understand, this estimate has been prepared on the assumption the exhibit would be held in a closed building. If it were to be held in Gorki Park it might be necessary to construct a pavilion, in which case the additional cost over and above that included in this estimate would have to be provided.

Mr. ROONEY. Let us stay for the moment with the money requested in this estimate. Would it be fair to say the cost as between the two locations would be approximately evenly divided?

Mr. POSNER. Between the location in Leningrad and the one in Moscow, yes, sir.

Mr. ROONEY. So one of these would cost one-half of $1,100,000, or $550,000?

Mr. POSNER. Yes, sir.

COST PER RUSSIAN VISITOR

Mr. ROONEY. Now, as I understand it, the most hoped-for attendance for 1 month in Gorki Park would not exceed 150,000; is that right?

Mr. ROBERTS. Yes, sir.

Mr. ROONEY. Do you realize that would amount to an expense to the American taxpayer of $3.67 a head? Give us an answer, please, do not shake your heads.

Mr. ROBERTS. Yes, sir.

COST TO ATOMIC ENERGY COMMISSION

Mr. ROONEY. This $3.67 for each of these visitors does not include the costs insofar as the Atomic Energy Commission is concerned; is that right?

Mr. POSNER. Yes, sir.

Mr. ROONEY. What would that be on top of the $550,000?

Mr. SEWELL. I would like to address myself to that question. The Atomic Energy Commission has not budgeted outright for any costs related to the proposed exhibit. We would propose to lend the USIA certain exhibits that are being used in Rome now and will be used in Geneva during the month of September when we have the International Conference over there. These exhibits have been budgeted for and will be paid for out of money appropriated to the Atomic Energy Commission.

Mr. ROONEY. Are we to understand from that that the Atomic Energy Commission's costs insofar as these two cities in Soviet Russia are concerned will be nothing?

Mr. SEWELL. They would be negligible.

Mr. ROONEY. What is the matter with the word "nothing"?

Mr. SEWELL. I am not prepared to say.

EXHIBIT AT GORKI PARK

Mr. ROBERTS. May I go back to Gorki Park? I think the only time that Gorki Park and our exhibit was mentioned was in the telegram before you. To the best of my knowledge, the Soviets have never offered us space in Gorki Park. If I recall the telegram correctly, Ambassador Thompson says that the Soviets will likely, or might, offer us Gorki Park, but from our negotiations with the Soviets I do not remember having heard that the Soviets had offered us Gorki Park, or ever mentioned Gorki Park. Am I correct?

Mr. MERRILL. That is correct.

Mr. ROONEY. This being a State Department telegram, I do not want to read it into the record.

(Discussion off the record.)

COST PER PERSON

Mr. ROONEY. Is it possible that you will agree to any such silly thing as this? Of course, the $3.67 apiece to the taxpayers is another thing. Is that taking into consideration this expense to the extent of $3.67 a head?

Mr. WASHBURN. We are hopeful that the downtown location where there will be considerably more attendance than at Gorki Park would reduce that figure considerably.

Mr. ROONEY. To what?

Mr. WASHBURN. On this conservative estimate of 250,000 people in Moscow, and another 250,000 in Leningrad——

Mr. ROONEY. Let us stay with Moscow. Do you think that you can get 250,000 people at another location?

Mr. WASHBURN. This, I believe, is an estimate based on conversations with the Embassy people.

Mr. ROONEY. Do they indicate this would draw 250,000 people?
Mr. WASHBURN. Yes, sir.
Mr. ROONEY. Then what do you figure it would cost a head?
Mr. WASHBURN. We are figuring the entire project at about $2 a head. However, you have other advantages.
Mr. ROONEY. You think that is all right, do you, Mr. Washburn?
Mr. WASHBURN. If you add in the attendant advantages of a great deal of publicity, possible coverage on Soviet television, it would be reaching a good many more people than those who actually see the exhibit.

EXHIBITS TO BE TELEVISED

Mr. ROONEY. You have led me to another question. Are we going to agree that the Soviet exhibition in the coliseum in New York and in the armory in Washington will be televised?
Mr. MERRILL. Reciprocally.
Mr. ROONEY. Are we to understand it will not be televised unless we are permitted television coverage in Moscow?
Mr. MERRILL. Correct, sir.
Mr. ROONEY. Have you any idea how many receivers there are in Moscow?
Mr. MERRILL. I think there are between 1 and 2 million.
Mr. ROONEY. And how many receivers are there in New York City alone?
Mr. MERRILL. Many more; but there are more viewers per set in Moscow than there are in New York.
Mr. CLEVENGER. You could get bigger crowds if you charged $2 a head. That is the way that it is with a show.

COST OF GUIDE STAFF

Mr. ROONEY. I note at page 14 of these justifications that you have an item in the last paragraph "Temporary employment for 40 days of 30 Americans." Thirty times forty is 1,200; right?
Mr. WASHBURN. Right.
Mr. ROONEY. $36,288, which is the amount set forth in this budget for those 30 people for 40 days, divided by 1,200 would come to $30 a day; is that right?
Mr. POSNER. Yes, sir.
Mr. ROONEY. Then, in addition to this cost of $30 a day, which would be by way of salary or wages, you have travel to add?
Mr. POSNER. Yes, sir.
Mr. ROONEY. What would that amount to?
Mr. POSNER. A total of $69,000, including per diem.
Mr. ROONEY. Then you would—including per diem?
Mr. POSNER. Yes, sir.
Mr. ROONEY. Can you split that $69,000 into per diem and travel?
Mr. MASEY. $24,000 for per diem and $45,000 for travel.
Mr. ROONEY. That would mean $20 a day per diem.
Mr. MASEY. Sixteen dollars a day, plus $4 incidental expenses, or $20 a day.
Mr. ROONEY. Twenty dollars a day?
Mr. MASEY. That is correct, sir.

Mr. ROONEY. And $30 salary. That is $50 a day for these people?
Mr. MASEY. That is right.
Mr. ROONEY. That is pretty high for guides; is it not?
Mr. CLEVENGER. They are eggheads.
Mr. WASHBURN. Russian-speaking eggheads.

HANDOUT MATERIAL

Mr. ROONEY. From page 16 of the justifications it would appear that in addition to costing the American taxpayers approximately $3.67 a head if it were to be held in Gorki Park, or $2.20 in connection with Menszhe, you are also going to give these people a take-home remainder at 15 cents each.
Mr. POSNER. That is included in the total cost of the exhibit, Mr. Chairman.
Mr ROONEY. You are right. I am slipping, Mr. Posner.

EXCHANGE RATE FOR RUBLES

What is the situation with regard to number of rubles to the American dollar?
Mr. POSNER. This estimate is based on the assumption of 10 rubles to the dollar.
Mr. ROONEY. What is the status of the agreement, Mr. Merrill, concerning that phase of this matter?
Mr. MERRILL. We have not discussed that phase sir. We would assume they will permit the 10-to-1 rate.

COMMITMENT FROM SOVIET GOVERNMENT

Mr. ROONEY. Finally, what would you say was definitely firmed up up to now concerning this proposal outside of your justifications which are in this record.
Mr. MERRILL. I believe that we have a definite commitment from the Soviet Government to enter into this exchange of exhibits in principle.
Mr. ROONEY. Without regard to time?
Mr. MERRILL. Without regard to certain details.
Mr. ROONEY. Time and place?
Mr. MERRILL. Time is fairly well settled.
Mr. ROONEY. What is the time?
Mr. MERRILL. The time is February, March, or April of 1959.
Mr. ROONEY. If you move it up any further you will be in Gorki Park. You stated it was to be in February a while ago.
Mr. MERRILL. Yes.
Mr. ROONEY. Now you want to make it February, March, or April.
Mr. MERRILL. Well, I think in Moscow it probably would be in February and running into March.

POSTPONEMENT OF EXCHANGE PROGRAM

Mr. ROONEY. I would suggest if within the ensuing days you get any definite information as to some of the things we have discussed here this afternoon which are still indefinite insofar as an agreement

with the Soviet people is concerned, that you convey that information to the committee's staff.

The following information was subsequently received from the Agency:)

UNITED STATES INFORMATION AGENCY,
Washington, June 27, 1958.

Hon. JOHN J. ROONEY,
Chairman, Subcommittee of the Departments of State and Justice, the Judiciary, and Related Agencies, House Committee on Appropriations, Washington, D. C.

DEAR MR. ROONEY: The attached letter from the Under Secretary of State reports that the exchange of exhibits between this country and the Soviet Union will be postponed at least 6 months from dates anticipated at the time this Agency requested supplemental funds for fiscal year 1959.

In view of this development, it is requested that the supplemental appropriation request for $1.1 million now pending before your committee (p. 9 of H. Doc. No. 394, June 9, 1958) be withdrawn. This request has the concurrence of the Bureau of the Budget for the executive branch.

Sincerely,

GEORGE V. ALLEN, *Director.*

DEPARTMENT OF STATE,
Washington, June 26, 1958.

Hon. GEORGE V. ALLEN,
Director, United States Information Agency.

DEAR MR. ALLEN: The recent agreement between the Governments of the United States and the Soviet Union provided that each Government should mount an exhibit in the capital of the other showing progress in the peaceful uses of atomic energy. In the initial negotiations with the Soviet Union it was assumed that such exhibits might be held in New York and Washington in February of 1959 and in Moscow and Leningrad at the same time. It is now apparent that it will be impossible to agree on conditions for the exhibitions and prepare the exhibits by that date. The Soviet Embassy will be informed before close of business June 27 that both exhibits will have to be postponed until the last quarter of calendar year 1959. The matters to be settled include rental of the exhibition halls in Washington, New York City, Leningrad, and Moscow, the charges for admission, and the ruble exchange rate applicable to expenses for the exhibits.

In view of this postponement of the opening date of the exhibits, you may wish to consider whether it would not be more appropriate to request supplemental funds for the financing of this exhibit after the opening of the new Congress rather than to urge the present Congress to approve the pending request for funds.

Sincerely yours,

CHRISTIAN A. HERTER,
Under Secretary.

Mr. ROBERTS. Yes, sir.

Mr. ROONEY. Now let us get this straight for the record—the proposed exhibition would concern nothing other than atoms for peace; is that right?

Mr. ROBERTS. Yes, sir.

AEC EXHIBIT IN ROME

Mr. ROONEY. Mr. Sewell, a while ago you referred to using the same sort of exhibit, insofar as the Atomic Energy Commission is concerned, which is now being exhibited where?

Mr. SEWELL. In Rome. Some of the devices that are in the exhibit in Rome now are proposed for use in Moscow.

Mr. ROONEY. Where is it being exhibited in Rome?

Mr. SEWELL. I do not know the answer to the question, sir. I will supply it for the record. I do not know the specific location of the building.

(The matter referred to follows:)

The United States exhibit is being shown in an official Government building known as Rassegna Palazzo Congressi in Rome, Italy.

Mr. ROONEY. When did the exhibition start in Rome?

Mr. SEWELL. Day before yesterday.

Mr. ROONEY. How long is it scheduled to be there?

Mr. SEWELL. Approximately 6 weeks. I am not sure of the closing date.

Mr. ROONEY. How did it get there? Who is conducting it?

Mr. SEWELL. I cannot answer the question, sir.

Mr. ROONEY. Has USIA anything to do with that?

Mr. WASHBURN. I believe this is AEC's responsibility.

Mr. ROONEY. Is your answer that you do not?

Mr. WASHBURN. USIA has nothing to do with it.

Mr. SEWELL. This is an exhibit that is being put on in conjunction with a trade fair in Rome. It has been handled by the Office of Special Projects in the Atomic Energy Commission essentially by one project engineer, Mr. John Vinciguerra, who is in Rome running the exhibit now. I have had nothing to do with the exhibit either directly or indirectly.

Mr. ROONEY. How does that exhibit which opened day before yesterday in Rome compare with the proposed exhibit at some location to be determined in Moscow?

Mr. SEWELL. It is of much smaller scope.

Mr. ROONEY. Can you for the record make some sort of comparison?

Mr. SEWELL. It is my understanding that the budget for the exhibit in Rome is approximately $250,000. I would like to confirm that later for the record, if I may.

AEC EXHIBIT IN GENEVA

Mr. ROONEY. You said something about Geneva. Is the same exhibit to be taken from Rome to Geneva or is this separate?

Mr. SEWELL. This is separate. It is an International Conference on Peaceful Uses of Atomic Energy, and in conjunction we will have an extensive exhibit. This is the followup to the conference that was held in 1955.

Mr. ROONEY. What will be the cost of the one in Geneva and when will it be?

Mr. SEWELL. It will be September 1 through September 14. The total cost, again as an approximate figure, is about $4.25 million. The reason I cannot give this figure exactly at this time is that these are two exhibits. The United States will have a general technical exhibit in the Palace of Nations——

Mr. ROONEY. The general subject is all peaceful uses of the atom?

Mr. SEWELL. Yes; but three separate headings.

Mr. ROONEY. When will Geneva be over?

Mr. SEWELL. September 14.

Mr. ROONEY. Where does the show go then?

Mr. SEWELL. It will either come back to the United States——

USE OF AEC EXHIBITS IN RUSSIA

Mr. Rooney. Why could you not leave it there somewhere and send it to Moscow and Leningrad by changing the dates with regard to the exhibitions and let us forget about this $1.1 million.

Mr. Sewell. We propose to make some of the material, that which would be suitable for display in Moscow, available for the Moscow show. The type of exhibit that will be in Geneva, the great majority of it could not be demonstrated in Moscow because this is a dynamic live exhibit in Geneva.

Mr. Rooney. Is that not the kind of one we want in Moscow?

Mr. Sewell. No, sir; not at anything like the kind of budget we are talking about.

Mr. Washburn. He is talking about the materials being live and dynamic, not the ideas.

Mr. Sewell. We would not propose to set up a live reactor, a critical facility, in Moscow; we would not therefore need special nuclear material there.

BUDGETING FOR ATOMS-FOR-PEACE EXHIBITS

Mr. Rooney. Under whose budget does the $4.25 million come?

Mr. Sewell. Atomic Energy Commission.

Mr. Rooney. For the Geneva exhibition?

Mr. Sewell. Yes, sir.

Mr. Rooney. How long since has this matter of atoms for peace exhibits been included in the atomic energy budget?

Mr. Sewell. The original appropriation for the current exhibit was part of the fiscal 1958 appropriation. The Commission has previously had funds for exhibits in connection with scientific meetings abroad. The Office for the 1958 International Conference was activated in July 1957. It is my understanding that the office operated until—November of 1957—may I make a remark off the record because I am not certain of my thinking? In November 1957, the 1958 budget was already approved. So the budget cost to sustain the Office of the International Conference came out of funds that were available at that time from the 1958 budget. The actual cost of putting on the conference was part of the 1958 budget. That has subsequently been expanded by a new appropriation of $900,000.

Mr. Rooney. Was the exhibit to which you referred a while ago which opened the day before yesterday in Rome included in the AEC budget previous to the time to which you now refer?

Mr. Sewell. Yes, sir.

Mr. Rooney. How long previously?

Mr. Sewell. I do not know the answer, sir.

USIA KNOWLEDGE OF AEC EXHIBITS

Mr. Rooney. When did the United States Information Agency first learn that the Atomic Energy Commission was in the business of exhibits on atoms for peace overseas?

Mr. Posner. I do not know the exact date we learned that. I can supply it.

Mr. ROONEY. How far back would you say? You understand why I am prompted to ask this question.

Mr. POSNER. Yes, sir.

Mr. ROONEY. We had been led to believe that the Information Agency was the Atoms for Peace Agency as far as exhibits were concerned.

Mr. WASHBURN. There is a difference here that the Rome exhibit and the Geneva exhibit——

Mr. ROONEY. Let us stay with that question as to when the Information Agency first learned about AEC being in the overseas business of exhibits on atoms for peace.

Mr. WASHBURN. We will have to supply that, Mr. Chairman.

Mr. ROONEY. That does not help me.

Mr. POSNER. It is my impression, Mr. Chairman—I would have to check this later—that we were consulted at the time that the Atomic Energy Commission was planning to engage in this exhibit and that at the time there was a distinction drawn between the activities of the Atomic Energy Commission, which would be primarily for scientific conventions such as the one at Geneva, whereas the responsibility of the United States Information Agency was in connection with exhibit showings for the general information of overseas audiences.

Mr. ROONEY. Which is the sort of one at Rome apparently; is that right?

Mr. WASHBURN. The Rome meeting, sir, is an electronic and nuclear conference and primarily attended by technical and scientific personnel.

Mr. SEWELL. Yes, sir; this conference is essentially for the scientific community in Rome and also the consequent exhibit.

EXCHANGE RATE FOR RUBLE

Mr. ROONEY. When you referred, Mr. Merrill, a while ago to the dollar at the 10-ruble rate, could you tell us, to complete this record, the present rate with regard to the expenses of our diplomatic establishment in Moscow?

Mr. MERRILL. Four rubles to one.

Mr. ROONEY. If they do not give you the 10-rubles-to-the-dollar rate, do you propose to go ahead with this?

Mr. MERRILL. I would think we would have to negotiate that point to oblige them to provide the 10-to-1 rate.

Mr. ROONEY. Suppose you were not successful. Would you still go ahead with it?

Mr. MERRILL. I think we would perhaps have to reconsider as to the total cost.

Mr. ROONEY. Mr. Clevenger?

Mr. CLEVENGER. I do not believe the well is worth pumping. We are not finding out anything hard and fast about this operation or whether it is going to come off.

Mr. ROONEY. Thank you, gentlemen.

SUBCOMMITTEE ON DEPARTMENT OF COMMERCE AND RELATED AGENCIES

PRINCE H. PRESTON, Georgia, Chairman

ALBERT THOMAS, Texas
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WALT HORAN, Washington
MELVIN R. LAIRD, Wisconsin

WEDNESDAY, JUNE 25, 1958.

DEPARTMENT OF COMMERCE

CIVIL AERONAUTICS ADMINISTRATION

WITNESSES

LOUIS S. ROTHSCHILD, UNDER SECRETARY OF TRANSPORTATION
GEORGE T. MOORE, ASSISTANT SECRETARY FOR ADMINISTRATION
OSCAR H. NIELSON, DEPARTMENTAL BUDGET OFFICER
JAMES T. PYLE, ADMINISTRATOR OF CIVIL AERONAUTICS
W. B. DAVIS, DEPUTY ADMINISTRATOR
J. H. TIPPETS, DIRECTOR, OFFICE OF AIR NAVIGATION FACILITIES
D. D. THOMAS, DIRECTOR, OFFICE OF AIR TRAFFIC CONTROL
H. H. HOWELL, ASSISTANT TO THE ADMINISTRATOR
ARVIN O. BASNIGHT, BUDGET AND FINANCE OFFICER
B. D. TALLAMY, FEDERAL HIGHWAY ADMINISTRATOR, PUBLIC ROADS ADMINISTRATION

CONSTRUCTION AND DEVELOPMENT, ADDITIONAL WASHINGTON AIRPORT

Mr. PRESTON. The committee will come to order.

Gentlemen, we had planned to take up the CAA request in the supplemental before us for operation and regulation, but we thought perhaps it might be best to take up the Chantilly Airport first, since Mr. Tallamy is here and we want to talk about this question of access roads. The item is contained in House Document No. 394. We shall insert at this point pages 1, 2, 3, 4, 8, 9, and 10 of the justifications.

(The material follows:)

Construction and development, additional Washington Airport

Request for fiscal year 1959	$53,500,000
Regular appropriation estimate, 1959	----------
Supplemental request, 1959	53,500,000
Budget estimate, fiscal year 1959	53,500,000
Employment:	
Average number, 1959 regular estimate	----------
Number involved this estimate	27
Increase	27

PURPOSE AND NEED FOR SUPPLEMENTAL FUNDS

To complete engineering plans and specifications, and construct an additional air transport terminal facility in the vicinity of the District of Columbia, in order to relieve air traffic congestion in the Washington area.

GENERAL JUSTIFICATION

Washington International Airport

In recognition of the need for additional airport facilities to accommodate air traffic in the Washington Metropolitan area, Congress in 1950 authorized the construction of a public airport in the vicinity of the District of Columbia through enactment of Public Law 762, 81st Congress. Funds have been appropriated and used in the amount of $1,056,803, to acquire approximately 1,050 acres of land near Burke, Va., the site originally selected for this airport. An additional $12.5 million was appropriated in August 1957 for acquisition of additional land and initial construction for the airport. In making the latter appropriation Congress directed that a study be made to reevaluate the selection of the site for the airport. This study was conducted under the direction of the Special Assistant to the President for Aviation Matters, and as a result of the study, he proposed that a site near Chantilly, Va., would best meet the requirements of public safety, airport, and airspace capacity, public service, and cost.

The President then recommended the selection of the Chantilly site and directed the CAA to proceed forthwith with the construction and development of a new public airport at this location to serve the growing needs of the Washington Metropolitan area. The urgency for the additional facility was summarized in the report to the President, as follows: "* * * that the Department of Commerce and the CAA proceed immediately with the construction and development of an additional airport. To again delay this essential construction would further aggravate a serious situation at the Washington Airport which now stifles the normal demand for air service in the National Capitol region. Further delay would cause continued uncertainty which has, since 1951, retarded to some degree the normal development of Loudoun and Fairfax Counties in nearby Virginia."

Work on acquiring land and constructing and developing the airport started immediately after the selection of the Chantilly site had been made. If the airport is to be constructed by late 1960 or early 1961 there can be no delays in any of the steps required. Our current forecasts clearly indicate that there will be need to accommodate some 7 million passengers by 1961 for the Washington area, as compared to an estimated 4,7 million in 1958. The Washington National Airport is operating near peak capacity with its present facilities, and if its passenger-handling capacity is not increased, then the excess demand will be approximately 40 percent by 1961, 100 percent more by 1965, and 150 percent more by 1970. This increasing demand is reflected in the following statistics.

Air passenger forecasts

[Millions]

Fiscal year	United States enplaned	Total, Washington passengers	
		Washington National (current facilities)	Washington International
1957 (actual)	44.9	4.2	----------
1958	51.0	4.7	----------
1959	57.0	5.0	.3
1960	64.0	5.0	1.0
1961	70.0	5.0	2.0
1965	91.0	5.0	5.0
1970	115.0	5.0	7.7
1975	140.0	5.0	10.4

Commercial jet aircraft will be placed into service late in this calendar year. The jet aircraft to be used in flights of more than approximately 500 miles will not have landing facilities at Washington until the construction of this airport is completed.

With the funds currently available, the land comprising the airport site is being acquired, a contract for engineering and architectural services to design and supervise the construction has been negotiated, and work on the actual design of the airport has been started. It is planned to start the site clearance approximately August 1, 1958, with actual heavy construction operations beginning in late September. The available $12.5 million will approximately cover the cost of the engineering contract, acquire land, site clearance and start the grading work.

"For an additional amount for 'Construction and development, additional Washington airport, including acquisition of land, $53,500,000, to remain available until expended: Provided, That not to exceed a total of $1,750,000 of this amount may be advanced from this appropriation to the applicable appropriations of the Civil Aeronautics Administration for necessary administrative expenses (64 Stat. 770)."

Appropriated, 1958	$12,500,000
Estimate, 1959	53,500,000

DETAILED JUSTIFICATION

This request for $53.5 million, together with the $12.5 million already appropriated, will provide an adequate airport for requirements through fiscal year 1965 except for an access road. This estimate makes provision for two parallel north-south runways, 11,500 feet in length, plus a 10,000 foot east-west runway; a basic terminal building; control tower; modern runway lighting; taxiways and 25 gates or unloading positions; utility systems for water, sewerage, and electricity; aircraft fuel storage and distribution system; aircraft and automotive parking areas. The plans are being developed on a basis that will permit expansion of facilities as future demands materialize.

Plans for an access road to serve the airport are under consideration by appropriate agencies at the Federal, State, and local levels. Pending the determination of the route, funds in this request for road purposes are limited to acquisition of a right-of-way, exclusive of road-construction costs.

The proposed development is based on criteria contained in the site-selection report, and requirements are based on current prices expected to apply during the period of construction.

The estimate for providing facilities for 1965 traffic is $66 million, including $12.5 million appropriated to date. Major items of cost are shown below:

Land	$8,282,000
Clearing, grading, drainage, fencing	8,585,000
Paving runways, taxiways, aprons	16,800,000
Lighting	2,037,500
Buildings	13,565,000
Utilities	3,216,000
Fuel systems	2,000,000
Roads and auto parking	1,098,000
Operating equipment	400,000
Subtotal	55,983,500
Contingencies	3,006,500
Subtotal	58,990,000
Engineering and supervision	7,010,000
Total	66,000,000

The detailed engineering of the airport has just been started. It is planned to initiate clearing and grubbing operations as soon as title to the property is vested in the Federal Government. Heavy grading is scheduled to begin later in the summer of 1958, so that paving operations can be started in the spring of 1959. All construction is scheduled to permit the airport to be placed in operation in 1960 or the early part of calendar year 1961.

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Detailed justification of specific items in the cost estimate follow:

A. Land acquisition and construction, $58,990,000

1. *Land acquisition, $8,282,000.*—

(*a*) Airport site, 8,200 acres	$4,305,000
(*b*) Removal or relocation of roads and utilities	677,000
(*c*) Access-road right-of-way	3,300,000

The cost of land and utilities relocation is based on the estimated unit cost in the White House report. The cost of the access-road right-of-way is based on the estimate of the Bureau of Public Roads.

2. *Construction, $50,708,000.*—Construction can be started in the last half of calendar year 1958 and completed in 1961. With the completion of this work, it will be possible to handle expected traffic loads expeditiously and relieve congestion at Washington National Airport.

B. Engineering and supervision, $7,010,000

1. *Airport design contracts, $4,300,000.*—This item provides for costs for consulting engineers and architects who have been retained to conduct preliminary studies, prepare detailed construction plans and specifications, and inspect construction work.

2. *Direct engineering and administrative expense, $2,710,000.*—This item provides for overall technical supervision of the project to protect the Government's interests. The requested positions are to coordinate planning and development work; maintain liaison with appropriate authorities on zoning work; work with the engineering and architectural consultants in preliminary studies, developing construction plans and engineering data; and subsequently supervising the construction phases of the program. Included also are requirements for housekeeping functions such as legal, personnel, accounting, procurement, contracting, and auditing services.

ACCESS ROADS

Mr. Preston. Instead of going into the testimony for the airport itself, I think it woud be appropriate at this time to ask a few questions concerning the access road, which might be settled now, and then we could excuse Mr. Tallamy, who is to appear before us again tomorrow.

Is that agreeable with you, Mr. Secretary?

Mr. Rothschild. We want to do it any way you want to do it, Mr. Chairman.

PUBLIC HEARING

Mr. Preston. I would like to inquire what your plans are for the location of this road, especially with reference to a public hearing. All of the people in Virginia who objected to the location of this access road should be heard, so if one of you would speak first to that proposition we would like to have that on the record so that the people of Virginia would be assured that a public hearing would be held.

Would you like to speak to that, Mr. Secretary?

Mr. Rothschild. I would like to start it if I may, Mr. Chairman.

Mr. Preston. Let us have your comments, Mr. Secretary.

Mr. Rothschild. In this request there is no money for the building of an access highway. There is here a sum of $3.3 million to acquire a right-of-way as yet undesignated as to location.

Either the CAA or the Bureau of Public Roads, or my office, has met with a number of groups of people from Virginia. The last meeting I think was held in my office last week, and at that time assurances were given to all of those present that no designation of any route would be made without adequate public hearing, that everyone would have a chance to be heard who wanted to be heard. That is our position, and that is the way it is going to remain.

Mr. PRESTON. Mr. Secretary, I think it would be helpful if the committee could be assured of the approximate date of the hearing to be established, who would participate in the hearing, and what the procedure would be because there is obviously a lot of interest in this question of the access road to the airport.

I wonder if you have formulated any plans at all about when the hearing would be held, who would be the adjudicating people in the hearing, and the approximate duration of the hearing. I think the public is entitled to have that information.

Mr. ROTHSCHILD. We have not set any dates but we hope to set them as soon as possible so that the matter can be resolved at an early date.

Mr. PRESTON. Who will conduct the hearing?

Mr. ROTHSCHILD. We would expect to have a hearing examiner conduct the hearing.

Mr. PRESTON. From what department or agency?

Mr. ROTHSCHILD. From CAA.

Mr. PRESTON. Who else would participate in the hearing?

Mr. ROTHSCHILD. Anyone who wants to be heard may participate.

Mr. PRESTON. Who else would sit as an adjudicating officer in the hearing?

Mr. ROTHSCHILD. I don't know that we have worked that out yet.

Mr. PRESTON. I ask this question because I think the Bureau of Public Roads should participate in the hearings, and the appropriate agencies of the State of Virginia should be involved in this hearing.

Mr. ROTHSCHILD. You mean as litigants or as listeners?

Mr. PRESTON. First of all, since Federal funds are being spent on this project, I think the rules should be laid down by the Federal agencies, but by all means, the State authorities should be recognized and be given an adequate opportunity to present their views.

Mr. ROTHSCHILD. We have met with them several times, as you know.

Mr. PRESTON. I understand that, Mr. Secretary.

Mr. ROTHSCHILD. I want to assure you that adequate public hearing will be held on this question.

You asked about the duration of the hearings. We expect the hearings to run until every person who had a valid reason for stating his case has had an opportunity to do so.

Mr. PRESTON. Why would it not be appropriate to set up a hearing, conducted by the CAA and the Bureau of Roads jointly?

Mr. ROTHSCHILD. I am sure that can be done.

Mr. PRESTON. When will it be done? We would like to be sure it will be done.

Mr. ROTHSCHILD. I want you to know your views have great weight with us, Mr. Chairman.

Mr. PRESTON. I appreciate the compliment, but at the same time, Mr. Secretary, I think today, while we are talking about the question, that we should lay down the ground rules for this hearing in order that people like Senator Robertson, Congressman Broyhill, and the representatives of the people from various civic associations in Virginia, can be assured that a proper public hearing will be held.

Mr. ROTHSCHILD. I think we can say that we would plan to do it on that basis, unless something develops which would make it desirable to change it somewhat, and if that does develop we will check with you before we make any decision.

Mr. PRESTON. That answer is not entirely satisfactory. Is there any objection to having the Bureau of Public Roads participate in this hearing as an adjudicating agency?

Mr. ROTHSCHILD. I can see none.

Mr. PRESTON. Mr. Pyle, do you agree to having the Bureau of Public Roads sit jointly with you, with your people?

Mr. PYLE. It would be very helpful to have them, Mr. Chairman. This would be a cooperative type of hearing. There would be advantages from such cooperation not only from our standpoint, but also from the Bureau of Public Roads. They will have equal responsibility with us in this area. They should participate in this hearing.

Mr. ROTHSCHILD. They are both parts of the Department of Commerce so that I don't see there is any reason why there would be any difficulties whatever.

Mr. PRESTON. We understand that perfectly well, but we are not entirely sure that everybody will be properly represented at this hearing.

Mr. SHELLEY. A point of clarification, Mr. Chairman.

Mr. PRESTON. I do not want to open the matter up for questions yet.

Mr. SHELLEY. This is not a question.

Mr. PRESTON. Will you make it in the form of a suggestion to the chairman?

Mr. SHELLEY. I am trying to get something clear in my own mind, if I may, Mr. Chairman. I am willing to let it ride.

Mr. PRESTON. Suppose you make it in the form of a suggestion.

Mr. SHELLEY. As I understand, Mr. Rothschild, or Mr. Pyle, said a hearing examiner will conduct the initial hearing. The hearing examiner will be designated by CAA. He will hold the open public hearing and make recommendations. To whom does he make recommendations? I think this is the point at which we should settle the question of who makes the recommendation.

Mr. PRESTON. That is a good suggestion. Who will make the final decision as to the location of the access road, Mr. Secretary?

Mr. ROTHSCHILD. I would think it would be a joint finding by the Bureau of Public Roads and the CAA.

Mr. PRESTON. To whom would that recommendation be made?

Mr. ROTHSCHILD. Probably to the Secretary of Commerce.

Mr. PRESTON. I take it, then, the Secretary of Commerce himself would make the final approval of the location of the road?

Mr. ROTHSCHILD. I suppose so.

Mr. PRESTON. Is that accurate? You say you suppose so.

Is that an accurate statement?

Mr. ROTHSCHILD. The Secretary would do as he does in many matters of this kind, Mr. Chairman: He would accept the recommendations of his Bureau chiefs and go along with them, unless there were some new evidence.

Mr. THOMAS. Mr. Chairman, one further suggestion. It may not be too farfetched. We thought we had this thing ironed out. He could come up with a recommendation that would make us chew this fat all over again. This is as much trouble as locating the airfield. Let the President decide the road questions.

Mr. PRESTON. I think the Department of Commerce, until the legislation pending now is passed, is the proper agency to make this

decision. There may be members who have a different opinion, but as far as I personally am concerned, if the Department of Commerce makes a decision then that will be satisfactory to me. I do not think it ought to be passed completely to the White House, and to follow your suggestion, Mr. Thomas would be passing the question of the road to the White House.

Mr. THOMAS. I was just trying to take the heat off this crowd. They have taken enough heat already.

Mr. PRESTON. I think that is what they are getting paid for.

Mr. THOMAS. If they had left it alone as it should have been, perhaps the airport would have been halfway started or at least one-third started.

Mr. YATES. I think it was Truman who said, "If you can't stand the heat, get out of the kitchen."

Mr. PRESTON. I agree with you. We had better leave it up to these people to make the final decision.

Mr. PYLE. I would like to point out this has been a joint effort throughout with the advice and assistance and help of the Bureau of Public Roads at every turn, and I think, quite frankly, and perhaps I would like to make this particular comment off the record for a moment——

Mr. PRESTON. Just a moment, Mr. Pyle. I an not sure we want to take any testimony on this matter off the record. Any statement you make I think should be made on the record at this point.

Mr. PYLE. I think there has been some lack of communication between the innumerable groups that have sprung up in Virginia and ourselves on this point. This has now been resolved. We have assured them one and all we are going to hold hearings. We work closely at every stage with the Bureau of Public Roads, because they are the specialists in this field. We respect their judgment, and it is a coordinated effort throughout, to be sure that we get their advice, their input, the coordination with the State and local bodies, to insure that the best possible decision from the standpoint of Government be made.

Mr. PRESTON. You see, Mr. Pyle, the committee has been importuned by many people to have a hearing within this commitee on this question.

Mr. PYLE. I am well aware of that, Mr. Chairman.

Mr. PRESTON. I have personally taken the position that it is a matter we should not try to decide ourselves but that is a matter for agency decision. The only thing we want to be certain of is that the proper people are participating in the hearing, in order that a correct decision can be made. I don't think it is right for us to make the decision, because we are not entirely familiar with the situation. We are not as qualified to make the decision, as, for instance, the Bureau of Public Roads and you people in CAA, who have an interest involved.

Mr. ROTHSCHILD. In addition to the public hearing, Mr. Chairman, we plan to make it possible for anyone who would rather furnish his comments in writing to do so, too.

Mr. PYLE. I can assure you, Mr. Chairman, that everyone who has an interest, as well as every agency of the Government that has an interest, will be in on this and we will do the right thing. I feel as you do, that this is a responsibility of the agencies concerned, that they should discharge, and I don't believe this committee should be

burdened with this additional chore. We will see that we do this job properly.

Mr. PRESTON. This represents a request of $53,500,000 for fiscal year 1959.

At this point if any member of the subcommittee has a question to ask on the matter of the access road, I would like to open it up for general questions on that one point alone—not in connection with the airport but on the matter of the construction of the access road.

Mr. Thomas?

COST OF ACCESS ROADS

Mr. THOMAS. Somebody used poor judgment. We are going to have to spend $35 million to get to the place. If it is that inaccessible that is enough for me.

Mr. ROTHSCHILD. I haven't seen any such figure, Mr. Thomas.

Mr. THOMAS. How much is it?

Mr. ROTHSCHILD. One estimate I have seen is about half that, $18 million.

Mr. THOMAS. Your justification doesn't give you any concrete figure. We tried to figure it out in here a few minutes before you came, and by the process of deduction we came up with a figure between $30 million and $35 million. This was based on your overall statement that it would cost around $90 million to $95 million, and you are asking for some $65 million for the airport. Is that a pretty good deduction?

Mr. ROTHSCHILD. The difference between what we are now asking for and the total cost of the airport represents not only the cost of the access road, but the cost of the next phase of additional airport facilities—an increase in concrete, an increase in services, an increase in terminal building, et cetera.

Mr. THOMAS. What is a good horseback opinion on the cost of the access road, and how many millions will there be?

Mr. ROTHSCHILD. We cannot tell you that until we know where it is going to be.

Mr. THOMAS. You mean where the road is going to be? You know where the airport is going to be.

Mr. ROTHSCHILD. Yes, sir. I mean where the highway is going to be determines its length and its cost.

Mr. THOMAS. Why do you question my guess of $30 million, then, if you don't know?

Mr. ROTHSCHILD. Because the guesses I have seen are $18 million.

Mr. THOMAS. Do you have any more to guess on than I do?

Mr. ROTHSCHILD. I don't think so; no.

Mr. THOMAS. $30 million, then.

All right, Mr. Chairman.

Mr. PRESTON. Mr. Shelley?

Mr. SHELLEY. No questions at this point.

Mr. PRESTON. Mr. Rooney?

Mr. ROONEY. I have no questions at this moment.

Mr. PRESTON. Mr. Flood?

Mr. FLOOD. Yes. I have a few I would like to ask about this baby.

Mr. PRESTON. On the question of the road?

Mr. FLOOD. On the question of the road, since apparently we are going to be limited to that. Why you want to limit it to that I do not know.

Mr. PRESTON. We will take up the airport next.

Mr. FLOOD. Let us talk about the road, then.

I will preface it by asking this: On July 26, 1957, President Eisenhower asked Congress for $35 million for a second airport at Burke, Va. A few days ago he asked Congress for a supplemental appropriation for $53.5 million for the Chantilly Airport; July 26, 1957, less than a year ago, $35 million for Burke; this month it is $53 million for Chantilly. Are those figures generally right?

Mr. ROTHSCHILD. Yes.

Mr. PYLE. I believe so.

Mr. FLOOD. The Site Selection Study Committee, I think, was appointed to resolve the site for the second airport. Was that not it, Site Selection Study Committee? You know which one I mean.

Mr. PYLE. Yes.

Mr. FLOOD. In that report, and that report was recently made, less than $3 million was added for an access road to Chantilly. Does anybody know that is right?

Mr. HOWELL. In the report?

Mr. FLOOD. I presume it is in the report or in connection with a statement somebody made in the report. What recommendation did the Site Committee make with reference to the so-called access road to the Chantilly Airport site?

ADEQUACY OF EXISTING ROADS

Mr. HOWELL. Mr. Chairman, on page 23 of the report entitled "Site Selection Study, Additional Airport for Washington, D. C.," it says:

> Access will be available via the proposed interstate route from Washington, D. C., to Front Royal, Va., at a point just west of Pender.

Mr. FLOOD. What does that mean? You are reading from this Site Selection Committee report?

Mr. HOWELL. Yes, sir.

Mr. FLOOD. That was filed when?

Mr. HOWELL. Dated December 1957. It was transmitted to the Congress, I believe, on January 14, 1958.

Mr. FLOOD. That Site Committee said what?

Mr. HOWELL. That access would be available via the proposed interstate route from Washington, D. C., to Front Royal, Va., at a point just west of Pender. Pender is a small community on United States Route 50, west of the town of Fairfax.

Mr. FLOOD. What road is he talking about in that report?

Mr. HOWELL. That would be the proposed interstate Route 66, which will cross U. S. 50 at about that point.

Mr. FLOOD. I take for granted that in reaching a conclusion to select a Chantilly site, that the question of access road was important, since this report so contained it. That was one of the conditions precedent. Is that so? Everybody told us so. Is that so? Isn't the access important?

Mr. PYLE. It certainly is.

Mr. FLOOD. So I presume it was important in this case.

Mr. PYLE. That is right.

Mr. FLOOD. And this report you are talking about now refers to what you conclude is a Route 66. That is the proposed Virginia interstate expressway Route 66 to be used as the Chantilly approach; is that right?

Mr. HOWELL. That is right.

Mr. FLOOD. Do I understand that would be from Washington to a point not quite to the Chantilly Airport?

Mr. ROTHSCHILD. It would be some distance from the airport.

Mr. FLOOD. So that even that report, recommending that route as the access route, would not in itself suffice?

Mr. ROTHSCHILD. I think that is a good part of the point. It is anticipated that an airport of this size and importance will generate so much traffic that no use of existing or contemplated facilities which were planned prior to the establishment of the site of this airport will suffice to handle the traffic.

Mr. FLOOD. So that means, from your very clear statement you just made, that any resolutions in selecting the site, which included existing highways or planned highways, if the question were to be resolved today, could not be considered because they would not suffice and would not be adequate these few months later.

Is that it?

Mr. ROTHSCHILD. I think that is right.

Mr. FLOOD. That is right. And even so, I repeat for the purpose of emphasis, that the President's requested $35 million, and for Chantilly alone for the airport it was $55.3 million; and the $55.3 million for Chantilly was based on accessibility, availability, and the anticipated traffic, none of which will suffice now to adequately serve an airport of the magnitude proposed and necessary for Chantilly. Is that not correct?

Mr. ROTHSCHILD. They will not serve exclusively. There must be additional access roads.

Mr. SHELLEY. Will you yield?

Mr. FLOOD. Yes.

Mr. SHELLEY. This is very interesting to me. In other words, for the planned highways and the existing highways, a study was made on the basis of certain normal traffic based on the existing population and the economic pattern of that area of Virginia; is that so?

Mr. ROTHSCHILD. Yes.

Mr. SHELLEY. And the building of the airport at Chantilly adds traffic which had never been conceived in the planning of these existing highways?

Mr. ROTHSCHILD. That is correct.

Mr. SHELLEY. The logical conclusion, then, is that these existing highways, or presently planned highways which were planned on the basis of normal traffic, will not be adequate to handle that traffic, plus the increased traffic created by an airport having the business that Chantilly will have to handle.

Mr. ROTHSCHILD. That is correct. It will be necessary either to create larger facilities——

Mr. SHELLEY. Widen the present roads, or something like that.

Mr. ROTHSCHILD. That is right.

Mr. Flood. Is it true that for widening Route 50, which is to form the final link of Route 66, the proposed highway, that phase of it will cost over $62 million, 90 percent, by the way, to be paid by Uncle Sam.

Do you say "No," or don't you know?

Mr. Rothschild. Mr. Tallamy will answer that.

Mr. Flood. I don't blame you for trying to hide from this whole controversy.

Mr. Tallamy. I was doing pretty good for a while.

Mr. Flood. My point is this, that if what my friend quotes from the report is true, and of course the report speaks for itself, and if what is true of the examination that has just developed, that much in addition will be needed and since the Chantilly Airport will cost some $30 million more even in the request than Burke Airport would, now I find out that the widening of Arlington Boulevard, Route 50, to form the final link of this Route 66 interstate highway, will cost over $62 million in itself.

Mr. Tallamy. I do not think that is right.

Mr. Flood. Would you indicate for the record what it could cost?

Mr. Tallamy. I don't know. I am sure it wouldn't cost that amount of money because there is such a relatively short distance involved, a few miles, I think the record being considered, what is a so-called access road to the Chantilly Airport could be defined as a new road, having no part at all of the existing Interstate System, or proposed Interstate System, Route 66 and extension of United States Route 50. The interstate location of Route 66 is now under study. It probably will not follow precisely Route 50, because Route 50 is so well developed now that rights-of-way costs would be excessive to do so. The location is under study by the State of Virginia.

Mr. Flood. May I interrupt to ask you this:

Is that the survey of the New York consulting firm which advised the Virginia State Highway Commission and recommends the erection and construction of new approach roads rather than the Arlington Boulevard, running through the Fairfax and Arlington County areas and that the new road, to be part of Interstate Highway 66, while it would be less costly than the one we talked about a few minutes ago, nevertheless the cost of that would run between $30 million and $60 million, even the least costly one. I am giving you $30 million leeway. Even this one you are talking about would cost between $30 million and $60 million, would it not?

Mr. Tallamy. I think that might be a reference to the cost of the interstate system itself, but not the cost of the access road.

Mr. Flood. This is a condition precedent to the service at Chantilly Airport. These were the roads that were planned. If that one cost too much, is this the new one that is planned to serve Chantilly, and this costs between $30 to $60 million addition, either way you want it?

Mr. Tallamy. I think there is no direct relationship between the two roads.

Mr. Flood. Of course, there is not.

Mr. Tallamy. The Interstate System road, as defined as interstate 66, might very well cost in that vicinity. I don't know.

Mr. FLOOD. Is it not true that to meet the requirements demanded for the opening of the Chantilly Airport of the nature and kind you are talking about, you must have, independent of any existing highway system, independent of any systems that were planned as a condition precedent and part of the site selection for Chantilly, 6 months ago, when it was made, independent of everything, now you have to scrap all that and you must have an entirely new highway service to serve Chantilly or it is inadequate.

Mr. TALLAMY. It is my opinion it is inadequate; yes, sir.

Mr. SHELLEY. Will the gentleman yield?

Mr. FLOOD. If you will permit me this:

Do you know of any facts now present or which should have been or could have been known that were not present, should not have been known if properly examined at the time the site selection committee made its report on Chantilly?

Could there possibly have been anything material that was missing then that is present now if it was properly examined?

Mr. TALLAMY. I had no connection, of course, with the original study.

Mr. FLOOD. What would be your suggestion under all those circumstances as a hypothetical question, and I pose it as such.

Mr. TALLAMY. I would assume any investigator would have available to him all the information that is presently available.

Mr. FLOOD. At least there should be no material discrepancy?

Mr. TALLAMY. I personally don't know of any.

Mr. THOMAS. Who made that selection?

Mr. FLOOD. The selection was made by a site committee and at the proper point I propose to examine in some detail as to the selection of the engineers, their relation to the construction at the Friendship Airport and many other interesting data, but we are only on the road at this point. I think I am about to get off the road.

I yield to my friend from California.

IMPROVEMENT OF EXISTING ROADS OR CONSTRUCTION OF NEW ROADS

Mr. SHELLEY. Am I to construe, then, that from your last answer a completely new road from Washington to Chantilly is necessary, or is there a possibility, after some survey is made, that improvement or enlargement of some of the existing facilities may supply a portion of the need?

Mr. TALLAMY. I think that Interstate Route 66, plus State highway connections from it to the Chantilly Airport, will render a very valuable service to the airport, but I believe that an additional road is necessary to meet all of the requirements of the airport as presently planned.

Mr. SHELLEY. For the entire length, the entire distance between Washington and Chantilly or for only a portion?

Mr. TALLAMY. You mean a new access road for the entire distance?

Mr. SHELLEY. Yes.

Mr. TALLAMY. A new road, but not entirely necessitated by Chantilly alone. For example, a combination of a new road leading toward Washington from Chantilly might very well be connected with a loca-

tion of the Interstate System in the vicinity of Washington, so that you could use the combination.

Mr. Flood. I think that will be all on the road at this point.

HEARING ON ACCESS ROADS

The chairman interrogated you, Mr. Secretary, with reference to his understanding, or what he hopes he understood the Department of Commerce and the CAA will do on public hearings.

May I suggest that you have the Department of Commerce file a memorandum as to how they propose to conduct these public hearings, with the dramatis personnae, the entire proceedings beginning with how you propose to issue notices, how close you are going to comply with the practice in State public highway and United States Public Roads proceedings in these interstate systems on public hearings, to whom you propose to give notice, what method of notice you propose to use, the time and place of the hearings——

Mr. Thomas. And the color of the ink.

Mr. Flood. And the color of the ink, my friend suggests. I add that last suggestion by my friend from Texas to indicate to you how concerned even with that detail is this committee with how you are going to go about this next stage of the Chantilly road.

Mr. Preston. I assume the Department of Commerce has adequate ability to set up a fair public hearing, and it would not be appropriate to require them to spell out all of those rules to be followed in a public hearing. I think that they can adequately do that.

Mr. Flood. Mr. Chairman, as a distinguished lawyer, I am sure you are interested in the question of notice. It is difficult to appear if you do not know where to go, or where to be. Taking first things first, I take it for granted there are many people who would like to be there who, for many reasons that you and I can think of, will not be notified if certain interests of which I am aware have anything to do with it. I would like to know, if the chairman does not, the method of notice that you finally agree on.

Mr. Preston. The chairman rules in this case that the Chair has adequate confidence in the Department of Commerce's ability to be fair and just in setting up the hearings, and such ground rules should not be spelled out at this time. I think that it would be a sad commentary if we expressed doubt that the Federal Government would be fair to the people of the country in solving a problem of this sort.

Mr. Flood. I am not questioning the integrity of the Department of Commerce under any circumstances in this case. That is not their problem. But I have reason, as you know I have—from the very beginning of this Burke-Chantilly controversy—to suspect a great deal that went on, and I simply say this, that I would like somebody to write me a letter indicating what form of public notice they intend to use, if and when they arrange a public hearing. That is very simple.

Mr. Preston. If the gentleman wishes to do that, that will be agreeable with the chairman, but I will not lay it down as a prerequisite.

Mr. Flood. If they do not want to, they do not have to. I could not be any more fair than that.

Mr. Clevenger. There has been an inference here that the Burke airport was to be built for so much less than the Chantilly airport. Of

course, this big Federal road project was not in the picture. Debts were not the factor that they are now. They admitted to me then—and I cannot remember whether I was chairman or sitting on the other side of the table as I am now—that the cost would be in excess of $70 million, without all this matter of highways. There was much more stone in the field to move; it was more expensive.

I want to tell you that one reason I had for opposing Burke was the proximity of that field with stacked airplanes circling around them. There was danger of a crash right over the 2 fields, but it was obvious that Burke would cost more than $27 million. That was only the basic construction and some runways. It did not contemplate the building. They told us that it would cost $70 at least, and I do not see where access roads would have been any less than you are talking about now.

Mr. PRESTON. Mr. Bow.

Mr. BOW. I have no questions.

NEGOTIATIONS WITH THE STATE OF VIRGINIA

Mr. HORAN. Mr. Chairman, I am a little late arriving here. I am a little jealous of the procedure in establishing roads, and I just want to know if it has been established this has all been done in the regular way through the State Highway Commission of Virginia.

Mr. TALLAMY. No decision has been made yet as to the location of the access roads. Virginia has been consulated by our Bureau and the CAA in connection with potentialities. The State of Virginia, insofar as the Interstate Highway System is concerned, has employed a consultant engineering to review the whole matter and interstate route 66, which follows generally the pattern of U. S. 50. No decision has been made on the part of Virginia or the Bureau of Public Roads as to the interstate pattern in Arlington and close to Washington.

The step that will follow a tentative decision on that matter will be the holding of a public hearing by the State of Virginia, and then after the testimony has been submitted by all interested parties to the State of Virginia, the transcript, plus the recommendations of the State, will be transmitted to the Bureau of Public Roads. Then our Bureau will carefully examine the final recommendations of the State, done in the light of the hearings. We will analyze the record of the hearing itself, and at that time decide whether or not to agree with the State of Virginia as to its suggestion and recommendation for the final location of the Interstate System approaching Washington. But no tentative locations have as yet been decided to the extent we can advance them to a public hearing stage.

Mr. HORAN. There is no action before the committee at this time, is there?

Mr. PRESTON. You mean about the location of the road?

Mr. HORAN. Yes.

Mr. PRESTON. No, there is not.

Mr. HORAN. Or any appropriations thereto?

Mr. PRESTON. Yes; there is an appropriation involved here for the construction of the airport.

Mr. HORAN. But not the access roads?

Mr. PRESTON. I think $3,300,000 is in here for right-of-way acquisitions, which is a very controversial item.

Mr. HORAN. It is very controversial, Mr. Chairman, because for myself I want the road built.

Mr. PRESTON. May I make this suggestion?

Mr. HORAN. I wish you would.

DATE OF COMPLETION OF ACCESS ROADS AND AIRPORT

Mr. PRESTON. Now, Mr. Tallamy, I think that there is a point here that has been raised that should be cleared up.

Mr. Flood has handed me a newspaper article which appeared in the Northern Virginia Sun under date of Wednesday, June 18, 1958, and it indicates perhaps this airport will be built several years before a suitable access road will be available.

What is the approximate time this Route 66 that you are currently talking about will be completed and be available to carry traffic to the airport?

Mr. TALLAMY. I really cannot give you a positive answer on that because it depends upon the rate at which the State of Virginia would desire to proceed with it. I would say that it could be completed probably in 4 to 5 years.

Mr. PRESTON. Mr. Pyle, when is it estimated the airport will be completed and ready for operation?

Mr. PYLE. We anticipate its being in operation in 1961. We are shooting for late 1960, but I think a fair and conservative estimate would be the early part of the calendar year 1961.

Mr. PRESTON. Is there any likelihood—and this is a very important question for our purposes—that the airport might be constructed and completed and operational and yet have unsatisfactory road approaches to it to carry the traffic?

Mr. PYLE. It would be our objective that would not be the case. We are working hard on that.

Mr. PRESTON. Is there any likelihood this condition could possibly exist?

Mr. ROTHSCHILD. It could happen if something were to delay the designation and building of an access road or highway.

Mr. HORAN. I think that was the point that I was trying to raise before we recessed a moment ago for the vote. I think the very key to this, and also the key to the whole problem, is to have an agreement and some activity on the part of the State of Virginia first.

Mr. PRESTON. If the State of Virginia's Highway Department does not elect to approve this Highway 66, then, of course, the Federal Bureau of Roads could not provide the funds for this interstate road, could they?

Mr. ROTHSCHILD. That is right.

Mr. TALLAMY. I would not assume, of course, that the State of Virginia would not provide the funds. It would be the timing of the providing of funds. The State of Virginia has evidenced great interest and activity in relation to making a final determination as to the location of 66. They have employed consultants. They have urged them to expedite their work. Their work is nearly completed now. We have had a number of conferences with the State of Virginia, and everything indicates that they are advancing rapidly.

But let me point to this—if, for some reason, the State of Virginia should advise us within the next 6 months or in a relatively short period of time that for some reason of theirs they cannot proceed with 66, an access road could still be constructed and be of material service to Chantilly by way of the parkway along the river.

Mr. PRESTON. Of course, that brings up a controversy; does it not?

Mr. TALLAMY. That brings up a controversy, but physically it would be possible.

Mr. PRESTON. Does the parkway exclude truck traffic today?

Mr. TALLAMY. It does. May I add, though, that a connection with the parkway would integrate with the Washington side of the Potomac so trucks could use that and could use existing Route 50.

Mr. PRESTON. How much out of the way would it be to reach the Chantilly Airport site by using, let us say, the Shirley Highway, or the Mount Vernon Highway? How much difference would there be in mileage as compared with the George Washington Parkway, roughly?

Mr. HOWELL. This [indicating] is a map on which I have shown the circumferential route actually under construction at this time in certain areas. This [indicating] is Interstate Route 66 approximately as it is approved to a point north of Fairfax. This [indicating] I have taken from the newspapers as being the proposal that will be contained in the report of the consultants employed by the State of Virginia. This is not official, I must add, but it follows a single route approximately to Route 7, and then there are four alternate routes from that point into Washington.

This [indicating] is the George Washington Memorial Parkway, which is apparently assured out to the circumferential route and that is paralleled by a route on the Maryland side.

Here is our airport site. This [indicating] is Route 50, which is a two-lane highway.

Mr. PRESTON. So actually you have in existence today Route 50, which goes reasonably close to the site, and what other route? What is this route on the map?

Mr. HOWELL. That is State Route 7 to Leesburg. It is called the Leesburg Pike. It becomes a four-lane, undivided highway around Falls Church.

Mr. PRESTON. Getting back to our original statement, we certainly do not want to try to make a decision here today as to the location of the route, but we are concerned with the question of whether this airport is going to be constructed and then not have an adequate road to reach it.

Mr. ROTHSCHILD. That puts it right up to us, and we have known this right along. There has to be a system by which the divergent views can be composed so that we can come to you and get the money in time to get the highway built, get whatever is decided on built so we do not have an airport out there without proper access.

COST OF CHANTILLY AIRPORT

Mr. Flood. That is the hidden cost in the selection of the Chantilly site. We have put a lot of flight time in on this Burke Airport business. I did for 10 or 12 years. We were given one set of figures and report and we were completely misled, the Congress and the public. The hidden costs here of the Chantilly site under the evidence we have developed today is going to send the cost of the Chantilly Airport over $100 million. It cannot miss.

Mr. Rothschild. I do not know precisely what you mean by "hidden costs."

Mr. Flood. The hidden cost is the access road, the hidden cost of the Chantilly Airport, which means that we must have roads to get in there, so it is going to send the cost of the Chantilly air site over $100 million, which would be twice as much as the Burke site under any circumstances, including roads. You can make it $60 million. It is still going to cost $50 million more, or $40 million, if you do not like the figure, but that is a lot of millions.

Mr. Rothschild. There is no doubt but that the Chantilly completion for 1975 will cost more money than anything that we were thinking of for Burke.

Mr. Flood. About twice.

Mr. Rothschild. Not by twice; no, sir.

Mr. Flood. By very close to twice.

Mr. Rothschild. By a sum of money. Why will it cost more? One reason is a longer access road is required. That is one item. Beyond that there is a great deal more land in the Chantilly site than there is or ever was contemplated for Burke. It is a matter of 8,200 acres of land as against 5,000.

COST OF ACCESS ROADS

Mr. Flood. Is it not true that the Site Committee appointed by the President reported to the Congress 5½ months after the President recommended Burke to us—5½ months later in comes this site report and at no place in the site report, which was a complete switch, was any mention made of the access roads which must cost anywhere from between $30 million and $60 million.

Mr. Rothschild. The roads?

Mr. Flood. To get to Chantilly it would cost that much?

Mr. Rothschild. No; it will not.

Mr. Flood. I want you to show me where it will not. I just asked Mr. Tallamy a few minutes ago. I gave him a $30 million leeway and he indicated to me that the second route other than 66 would cost between $30 million and $60 million. I will give you a leeway of $30 million.

Mr. Rothschild. He must have misunderstood your question.

Mr. Flood. Ask him. He is sitting in the room. Do you recall, Mr. Tallamy, I read to you a New York engineer's recommendations to the Virginia Highway Commission and I said to you the second recommendation, as distinct from Route 66, in their opinion, would cost somewhere between $30 million and $60 million? I gave you a $30 million leeway.

Mr. ROTHSCHILD. They were not talking about an access road.

Mr. FLOOD. I am.

Mr. ROTHSCHILD. That report is not talking about an access road.

Mr. FLOOD. What report?

Mr. ROTHSCHILD. The one that you are quoting from.

Mr. FLOOD. It is the substitute for Route 66, which is a condition precedent to serve Chantilly. Mr. Tallamy said there is another route besides 66, because that might cost too much. It is that one that I am talking about, and it will cost $30 million to $60 million.

Mr. PRESTON. Suppose that we ask Mr. Tallamy.

Mr. FLOOD. I asked him once. Ask him again.

Mr. PRESTON. Will you comment on the question raised?

Mr. TALLAMY. I think that there is a little confusion on the subject. Route 66 is an interstate-highway system that would lead from Washington out toward Front Royal, and a portion of Route 66 would serve interstate-highway traffic solely, and the other portion would serve the access road, so we cannot say that the entire cost of the interstate system portion of the road from Washington to the airport is access-road cost because it would be there anyway in the construction of the interstate system by the State of Virginia and the Bureau of Public Roads. But if you added that cost that would be there anyway, and the additional cost of a spur from it over to the Chantilly Airport, it might cost as much as that. I cannot tell you. I do not have any precise figures, but a combination of the two might cost that much.

Now, an access road from the airport by some other location, such as the parkway, would cost nowhere near $60 million. It would be more near $20 million to $24 million, I would judge.

Mr. FLOOD. It would cost that much more which would be half the cost of the Route 66 proposal, plus the widening of Route 50 at Arlington Boulevard. That would be an extremely expensive operation.

Mr. TALLAMY. I do not think that a 50-percent charge there would be an equitable charge against the cost of the interstate highway just for traffic to Chantilly. It would be a minor portion of the total cost.

Mr. FLOOD. As between Route 66, plus the widening of 50 at Arlington Boulevard as against the new route proposed by the New York engineers, which would eliminate the Fairfax and Arlington County route, the second route, would cost much less than the other one.

Mr. ROTHSCHILD. Neither of those routes is an access highway.

Mr. FLOOD. But either one is a condition precedent to serving Chantilly.

Mr. HORAN. The decision to build the airbase at Chantilly has been settled. All we are dealing with here is the procedure in order to have a route out there.

Mr. FLOOD. At this point we are on the road. That is what we are talking about, the road.

Mr. HORAN. That is merely a matter of procedure. We have to have a road. I again submit that Mr. Tallamy—and I suppose he has been doing it—should urge the State of Virginia to get into the act, and I suppose they are doing it.

Mr. TALLAMY. Yes, they are.

Mr. HORAN. It seems to me that is all there is before the subcommittee.

Mr. PRESTON. You are quite right. That is the comment that I was about to make. As long as we are sure that an adequate public hearing will be held and the public interest will be protected we have performed our mission.

Mr. FLOOD. As far as this subcommittee at this point is concerned, I do not quarrel with that except I have gone further on the road, because I want to lay the basis for an examination of more detail, if and when we get to the airport, because ultimately I intend to ask for a congressional investigation of the location of the site of the Chantilly airport under all of these circumstances, if these facts are true.

Mr. PRESTON. At this point, since you have mentioned that, I think that it would be a good idea to go into the request for the Chantilly Airport, and Mr. Tallamy, we will excuse you and your people at this point.

Mr. PRESTON. Mr. Pyle, do you have a general statement to make in connection with this request?

Mr. PYLE. Mr. Chairman, I have a statement which covers both items. Perhaps it might be appropriate at this time to insert it in the record, or do you prefer that I deal with that portion pertaining solely to Chantilly?

Mr. PRESTON. I prefer that you deal with that portion dealing with Chantilly at this point.

Mr. PYLE. All right.

GENERAL STATEMENT ON WASHINGTON INTERNATIONAL (CHANTILLY) AIRPORT

I am sure the committee is well informed as to the background and need for an additional airport to serve the Washington area. This would be the Washington International Airport, capable of providing service to the jet-powered air transports that are now being produced. The subject has been extensively studied, and the President has directed the CAA to proceed forthwith with construction at a site near Chantilly, Va. It is planned that the airport will be ready for use late in calendar year 1960 or early 1961, and by that time in excess of 1 million passengers will need be accommodated by this facility. By 1965 the passenger demand has been forecast at 5 million and expected to reach 10.4 million in 1975. The airport facilities are being planned to meet this volume of demand. The construction included in this estimate is scaled to the demand expected by 1965, but designed for later expansion. The amount requested will provide a complete airport unit except for the hangars and an access road. The request includes $3,300,000 that will be used to acquire right-of-way for the road, the location of which is being coordinated with the interested, responsible local, State, and Federal agencies concerned. The total cost of the road will depend upon its location.

We are aware that the committee is concerned with the amount authorized in the enabling legislation being exceeded by the present airport plan. Amending legislation removing the limitation has been passed in the House and is being considered by the Senate.

TOTAL COST OF WASHINGTON INTERNATIONAL AIRPORT

Mr. PRESTON. The committee would be greatly interested in knowing the best estimate that you and your associates can give as to the total cost of this facility, including the hangars and the access roads.

Mr. HOWELL. Mr. Chairman, this is an estimate by stages.

Mr. PRESTON. Do you have a copy of this exhibit?

Mr. HOWELL. Five copies, together with supporting data as to how those estimates were arrived at. They were prepared in conjunction with the consultants whom we have employed to design and supervise the construction of the airport.

Mr. PRESTON. Will you quote the amounts?

Mr. HOWELL. It is for $85 million.

Mr. PRESTON. What is this figure in the right-hand column of $98,500,000?

Mr. HOWELL. The estimated cost of development for the traffic we anticipate in 1965 is $66 million. That is the total of the $12,500,000 already appropriated by the Congress and the amount of this request.

Mr. PRESTON. Not appropriated?

Mr. HOWELL. The $12.5 million has been appropriated. An additional $19 million will be required to develop the facilities which we believe necessary to accommodate the traffic that will develop by the year 1975, making the net cost of the airport $85 million, not including the cost of access roads, and for ultimate development beyond that time, essentially in the terminal area, an additional $13.5 million would be required, making a grand total of $98 million.

Mr. PRESTON. Well, for the time being, we are concerned with the 1965 traffic, so the figure is $66 million for everything?

Mr. PYLE. Yes. I just want to point out that is not for everything. It does not include hangars.

Mr. PRESTON. My question included hangars and access roads.

Mr. HOWELL. I should have pointed out that did not include hangars. It includes the rights-of-way for the access roads, but no access-road construction.

Mr. PRESTON. What is the best estimate you have today on the question of hangars.

Mr. HOWELL. Our estimates which we have presented to Congress have never included cost of hangars or maintenance or overhaul bases, because those would be designed specifically for individual tenants. At such time as a tenant is willing to make a commitment for some specific facility we would request funds from the Congress to erect it, on the basis of the business proposition, self-amortizing, similar to the way such facilities are developed in communities that use the revenue bond method.

Mr. PRESTON. What is the best estimate you can give us today—as a matter of fact, I do not believe you can give us an estimate on access roads, can you?

Mr. YATES. How many hangars will this accommodate?

Mr. PRESTON. I believe the number is unlimited. There are no hangars in this estimate.

Mr. YATES. Do they have an estimate of the number of hangars intended?

Mr. PRESTON. That will depend on the number of airlines.

Mr. Howell. Our consultants are inviting airlines to estimate their needs for a long time in the future so that ample provision can be made for siting those facilities as they develop a master plan.

In addition, if any airline is sufficiently interested to commit itself we will seek funds through this self-amortizing proposition.

Mr. Preston. The committee has before it a statement entitled Preliminary Estimate, Washington International Airport," dated May 1, 1958. On page 3 we see the figures of $15,300,000 as the estimated figure for access roads.

Which route would this figure contemplate?

Mr. Howell. Mr. Chairman, this was a document prepared in order to negotiate with our engineers as to the scope of the contract. Our engineers are currently operating under a letter of intent. The contract is being finalized, but it does cover selection and design of an access road. It was included only after the Bureau told us that because the pressure of work on them they would not be able to handle it with their forces.

Mr. Preston. It is a thoroughly unreliable figure?

Mr. Howell. At the moment; yes.

Mr. Preston. Used solely for the basis of working with the engineers?

Mr. Howell. Yes, sir.

Mr. Preston. We can assume this airport in its finality, excluding the hangars, will probably approximate $85 million.

Mr. Howell. In its finality; yes, sir.

Mr. Rothschild. For 1975; yes.

Mr. Yates. That is 1975.

Mr. Howell. That is if it were built now for 1975 traffic.

Mr. Preston. I am thinking in terms of 1965 traffic plus your access roads. It would be in the neighborhood of $85 million. Do you agree with that, roughly?

Mr. Howell. Yes.

Mr. Preston. Let us insert in the record at this point the chart just discussed entitled "Washington International Airport Preliminary Estimate by Stages."

(The chart referred to follows:)

Washington International Airport, preliminary estimate, by stages

	Unit cost	Development for 1965 traffic	Additional development for 1975 traffic	Ultimate development	Total
1. Land acquisition:					
(a) Site and approach areas	8,200 acres, at $525	$4,305,000			$4,305,000
(b) Removal or relocation of utilities	Lump sum	677,000			677,000
(c) Access highway right-of-way	do	3,300,000			3,300,000
2. Clearing, grubbing, and demolition	do	253,000			253,000
3. Grading	9,870,000 cubic yards, at $0.50	4,935,000			4,935,000
4. Drainage	Lump sum	2,272,000			2,272,000
5. Turfing and perimeter landscaping	do	500,000			500,000
6. Terminal area landscaping	do	600,000		$150,000	750,000
7. Paving:					
(a) Runways, taxiways, and aprons (25 positions)	1,535,000 square yards, at $10	15,350,000			15,350,000
(b) Taxiways and aprons (15 positions)	659,000 square yards, at $10		$6,590,000		6,590,000
(c) Aprons (25 positions)	270,000 square yards, at $10			2,700,000	2,700,000
(d) Runway and taxiway shoulders	580,000 square yards, at $2.50	1,450,000			1,450,000
(e) Taxiway shoulders	290,000 square yards, at $2.50		725,000		725,000
8. Taxiway overpass	Lump sum		1,000,000		1,000,000
9. Airport lighting:					
(a) Runway lighting	33,000 linear feet, at $10	330,000			330,000
(b) Taxiway lighting	71,500 linear feet, at $5	357,500			357,500
(c) Taxiway lighting	52,500 linear feet, at $5		262,500		262,500
(d) Obstruction lighting	Lump sum	45,000			45,000
(e) Threshold area lighting	do	1,305,000			1,305,000
10. Fencing	125,000 linear feet, at $5	625,000			625,000
11. Buildings:					
(a) Terminal building	25 gates, at $350,000	8,750,000			8,750,000
(b) Terminal building addition	15 gates, at $350,000		5,250,000		5,250,000
(c) Terminal building extension	20 gates, at $350,000			7,000,000	7,000,000
(d) Heating plant	Lump sum	2,815,000	700,000	800,000	4,315,000
(e) Control Tower	do	1,000,000			1,000,000
(f) Service buildings	do	400,000	100,000	100,000	600,000
12. Water supply system	do	1,000,000			1,000,000
13. Water storage system	do	250,000			250,000
14. (a) Water distribution system	26,000 linear feet at $15	390,000			390,000
(b) Do	14,000 linear feet, at $15		210,000		210,000
15. Sewage treatment plant	Lump sum	750,000			750,000
16. Sanitary sewer system	40,000 linear feet, at $10	260,000	140,000		400,000
17. Electric power supply (secondary)	Lump sum	176,000			176,000
18. Electric distribution system	40,000 linear feet, at $10	260,000	140,000		400,000
19. Communications distribution system	40,000 linear feet, at $5	130,000	70,000		200,000
20. Fuel storage and distribution system	Lump sum	2,000,000	500,000	500,000	3,000,000
21. Auto parking area:					
(a) 3,000 vehicles	162,000 square yards, at $4	648,000			648,000
(b) 1,000 vehicles	54,000 square yards, at $4		216,000		216,000
(c) 2,000 vehicles	108,000 square yards, at $4			432,000	432,000

22. Interior roads:					
(*a*) Patrol road	75,000 square yards, at $2	150,000			150,000
(*b*) Service roads	75,000 square yards, at $4	300,000			300,000
(*c*) Do	50,000 square yards, at $4		200,000		200,000
23. Operating equipment	Lump sum	400,000	200,000	100,000	700,000
Subtotal		55,983,500	16,303,500	11,782,000	84,069,000
Contingencies		3,006,500	838,185	657,620	4,502,305
Subtotal		58,990,000	17,141,685	12,439,620	88,571,305
Engineering and supervision		7,010,000	1,858,315	1,060,380	9,928,695
Total		[1] 66,000,000	19,000,000	13,500,000	[1] 98,500,000
Total development for 1975 traffic		[1] 85,000,000			

[1] Totals exclude construction of access road which is essential to 1965 traffic.

Funds will be requested when location of road is determined.

Mr. PRESTON. Mr. Pyle, the committee considers you to be the expert in this area, you and Mr. Howell and your associates. Do you feel that the plans you have submitted to the committee for 1965 for the traffic of 1965 are completely adequate and that it will embrace the possibilities and eventualities in improvement of aviation and will serve as a completely modern and model type of airport facility for the traffic that it is designed to accommodate?

Mr. PYLE. Yes, I do, Mr. Chairman, bearing in mind that to meet the requirements of the Capital City for 1975 there will have to be further improvement. This is a solid foundation on which we can expand for future need. It will meet the needs completely for the 1965 traffic that we estimate.

Mr. PRESTON. We are anticipating the day when you might come back in 1963 and say you feel you should have so many million dollars for this improvement at the Chantilly Airport. You do not think you will be likely to do that?

Mr. HOWELL. Mr. Chairman, this estimate includes a considerable sum of money, for instance, for lighting in the threshold area, which is a necessity if we are to further reduce the weather minimums under which aircraft can land. This is a result of the tests CAA conducted at Andrews Field last spring and summer. There is the possibility that technological advances would be made that we do not know of now, but which we would want to incorporate. With that hedge, I think we can safely say we will not be back for additional funds to develop the airport as we now conceive it.

Mr. PRESTON. Do you not anticipate that by 1965 you will be able to effect landings at zero ceiling?

Mr. HOWELL. Whether that is a good target year, I cannot say, but this airport will have the facilities to do it, if facilities now conceived to do the job actually prove out. In other words, we have incorporated the new type of lighting which is considered almost mandatory for lower ceiling landings.

Mr. ROTHSCHILD. I might add this word. We are dealing here, as you know, with a situation which does not grow like anything else. It explodes. Our estimates in years past have always been reasonably conservative. We tried not to make them conservative in this instance. We tried to be more factual than conservative. There could be a factor which could cause the growth to be greater than we anticipated. That reservation should be in the mind of everybody.

Mr. PRESTON. I think we all recognize that fact. It is a rapidly moving picture. None of us can truly anticipate the eventualities in aviation.

Mr. PYLE. I would like to add this if it is appropriate. These estimates and plans have been based not only on the study of the consultants used by General Quesada but also on our own figures and the architect and engineering combination of which Mr. Howell speaks, who have been working with us already under a letter of intent.

Mr. FLOOD. What is the name of the firm?

Mr. ROTHSCHILD. Ammann & Whitney, Eero Saarinen, Burns & McDonnell.

Mr. FLOOD. You did not have J. E. Griener?

Mr. ROTHSCHILD. No, sir.

Mr. PRESTON. Does this plan at Chantilly envision a heliport also?

Mr. HOWELL. Yes, sir, facilities for handling helicopters. The geometrics have not been figured out.

Mr. PRESTON. It contemplates movement of helicopters between Washington National and Chantilly or any other place in the area where helicopters might be approved?

Mr. HOWELL. The airport itself would accommodate helicopter traffic.

Mr. PRESTON. Have you developed plans to the point that the terminal building itself is in design?

Mr. HOWELL. No, sir.

Mr. PRESTON. Have you given any thought to the placement of a helicopter landing point on top of the terminal building?

Mr. HOWELL. I would have to say in that regard, Mr. Chairman, that the consultants are now in a phase of assembling data and making studies that are necessary to get the basic concept of just how the terminal building will be laid out, with no concept as yet as to what it will look like. Whether it would lend itself to the incorporation of a heliport on the roof of the building, I cannot say.

Mr. PRESTON. I think if we are going to build this facility we ought to really make it the most modern facility in America. It should be the model.

Mr. HOWELL. That is our objective.

Mr. PRESTON. I think you should consider the possibility of making the structure itself strong enough and designed to be capable of accommodating helicopters on top of the building itself.

Mr. ROTHSCHILD. Do you favor that over a helicopter pad right close to the building?

Mr. PRESTON. I surely do, because as soon as you put the pad out you will move it away from the taxiways and where these jets operate, and it will involve a time lag. You should plan it to accommodate helicopter traffic right on the building with an elevator right down, make it strictly modern.

Mr. PYLE. The point you bring out is just the point that we have held uppermost in the design and planning of this airport. It will and must be the most modern facility. We must be aware, too, of the problems involved in many areas that we are working. There are operational safety problems that may well require that we not place a heliport on the roof. The helicopter has operational problems and we must be very careful that we do not in any way create a built-in hazard that might serve to haunt us at a later date. All these factors must be considered in our planning. I can assure you if this is a practical device it will be used.

Mr. PRESTON. If you do not do it, New York or Los Angeles or San Francisco or some other modern city will do the same thing and we will have a second-class airport if you do not put into this plan every idea that is reasonably practical.

Mr. PYLE. We intend to do it.

Mr. FLOOD. I like the idea of having a landing pad on the roof of a building and do not believe it is impractical. If it is to be the kind of airport everybody wants it to be, there should be more than one

landing pad. You will have to have a helicopter area. There is no reason why, however, for certain purposes there should not be such a pad in such a place as the chairman indicates, but in addition to that, you will have to have a helicopter area, you will have to have a heliport which will handle anything, because you are going to have helicopters propelled by jets, the propulsion of helicopters will shortly be jet pods of various kinds on the "choppers" and they will utilize much of the fillers or feeders between surrounding airports up to 300 miles, up to 200 miles anyhow, for short-run airways.

I would hope you would have areas in addition for convertiplanes which would be instead of a heliport a convertiport. But there is no reason why on top of that building you should not have a landing pad. It is only going to be a few stories high. But in the area contiguous to the terminal building you should have a convertiport and/or heliport or both in that area because you are going to have short takeoff convertiplanes operational because many people in the Defense Department are indicating they prefer them to "choppers" now. We may be getting away from "choppers" for military purposes in all branches, altogether, except maybe Marines on helicopter carriers for their purposes. But the Army, which has been the big "chopper" operator, other than the Marines, may go to converticraft for short takeoff for many reasons, including maintenance, safety and all kinds of things. That being true, in this airport, Mr. Chairman, you should have planned, modern, space for a convertiport or heliport. I do think you should have what the chairman wants on top.

ENGINEERING COSTS

Mr. PRESTON. It appears to me you have a very high engineering cost in your estimates. You have $7,010,000 for engineering and supervision. Does that figure include the $4,300,000 for airport design?

Mr. HOWELL. Yes, sir, that includes all of the administration and the overhead cost to CAA. I might add that our engineering contract is for the design of the ultimate facility.

Mr. PRESTON. What is the rate? Have you executed a contract already?

Mr. HOWELL. We are operating under a letter of intent.

Mr. PRESTON. What percentage does the contract call for?

Mr. HOWELL. The basis of our letter of intent, which figures will be carried over into the formal contract, on the design of the airport facilities—that is the runways, taxiways, grading—the fee figures out at 1.13 percent of the total construction cost. On the design of the utilities—that includes water services, sewage disposal, and all of the underground services in the ramp area—the fee figures 4.55 percent. The design of the building, the fee figures 5.52 percent. On the access highway, 5.07 percent. Our overall engineering design percentage is 3.59 percent.

Mr. PRESTON. What about the figure of 5.5 for the building? Is that not higher than the usual?

Mr. HOWELL. No, sir; I think not. Around 6 percent; 4, 5, or 6 percent, depending on the architect.

Mr. PRESTON. We realize at this point it is difficult to go into the minor details of the plan because you are not really in a position to give them at this time.

Mr. HOWELL. All we have done to date is firm up our general runway layout to establish the configuration of the site itself.

RUNWAYS

Mr. PRESTON. What length will the runways be?

Mr. HOWELL. 11,500 feet for the parallel north-south runways and this is the general outline of our site. The site is based on ultimate length of 12,000 feet for the principal parallel runways, with a 10,000-foot cross-wind runway. Our land encompasses a minimum of 2,000 feet laterally from the center of any runway and we are acquiring land a mile and a half beyond the end of the runway so that the airport will be protected on all sides to a height of 150 feet.

Mr. PRESTON. Adequate ownership on all sides.

Mr. HOWELL. Yes, sir: we explored the cost of ownership versus easements and found it was virtually equal. We will offer the maximum community protection that any airport in the United States now offers and will be protected against people coming in and building houses directly at the ends of the runways, which has been historic around the United States.

Our runways are configured for a maximum capacity. The standard pattern will be for landings from south to north and for takeoffs to the north, with the possibility of simultaneous takeoffs both to the north and to the west to give us maximum capacity. Our runways are separated by 6,700 feet. When simultaneous use does come into being, it can be accomplished with the utmost safety.

The area between the runways is reserved for terminal purposes and I can assure you there will be ample area for heliports or any type of terminal operation.

TUNNELS

Mr. PRESTON. Do you plan to use underground tunnels for vehicles to approach the terminal?

Mr. HOWELL. Our logical approach to the airport with our terminal area in between the runways is to come up and around the north-south runway and then head for the——

Mr. PRESTON. Through tunnels?

Mr. HOWELL. No, sir; on the surface. It might be that ultimately we will have to have taxiways overpass the access road, but that will depend on the final plans.

Mr. PRESTON. But there is no need for tunnels?

Mr. HOWELL. No, sir; unless one would come directly south with the access road which would involve a very expensive tunnel.

Mr. PYLE. Mr. Chairman, I would like to point out one factor which I think is an innate feature. With the terminal area in here, as Mr. Howell pointed out, the approaches from the south to the north, the aircraft can come in here and when they stop rolling, slowed down, they can come in here with a minimum of taxiing from the runway to the terminal area. In like manner minimum taxiing from the ter-

minal area to the takeoff point either north or west. This is a very praiseworthy feature of the layout as set forth there.

Mr. PRESTON. Any general questions on this item?

NUMBER OF RUNWAYS

Mr. YATES. Why do you have only 2 runways, 2 main runways? I know you have a cross-wind runway but I keep thinking of the inadequate situation at most of the major airports now where there is a long tie-up because of the traffic situation. Planes cannot depart because other planes are coming in and using runways. This is an airport that presumably will take care of our transportation needs through 1975 and on. Your plan here, as I see it, provides only two runways. Do you have space for 3 or 4 parallel runways or is that not contemplated?

Mr. HOWELL. That is not contemplated. Normally, subject to correction from Mr. Thomas, we will be using one runway exclusively for landing and one exclusively for takeoff and under the standard pattern you can take off simultaneously on the north-south and the east-west runways because your patterns are diverging.

Mr. YATES. How many planes can you service an hour?

Mr. PYLE. About a hundred.

Mr. YATES. That would be 1½ per minute.

Mr. PYLE. Yes.

Mr. YATES. You have that many now, do you not?

Mr. PYLE. Yes, but we have to remember several factors in this problem. One of them is that the planes will be getting bigger all the time and carrying more passengers per plane. I do not anticipate that we will necessarily have more operations just because there are more passengers moving in and out of the airport.

Mr. YATES. Planes are going to have more passengers, too, will they not?

Mr. PYLE. Per plane.

Mr. YATES. That is right, you will have more passengers wanting to travel.

Mr. PYLE. That is correct, but, for instance, Mr. Curtis in his plan on which a great deal of our thinking is based today points out there may be less aircraft in spite of the fact that there will be 3 or 4 times as many passengers but each aircraft will carry maybe 3 or 4 times as many passengers.

This is one aspect, the other being the point Mr. Howell made that you can take off in two directions. Third, by proper planning of taxiways we can increase the efficiency of the airport materially. One of the big problems today is the taxiways are not properly planned so that we have built-in bottlenecks at almost every airport in the country. This we will obviate by having the proper system of taxiways. There are parallel taxiways required.

Mr. YATES. Suppose you find you need an additional runway in 1965 or in 1975. Will your plans permit you to put another runway in?

Mr. HOWELL. I would prefer Mr. Thomas talk to that.

Mr. YATES. Suppose you find your pattern of traffic increases to such a great extent that your plan as you have presented it now does

not permit taking care of the traffic, that the congestion is so enormous you must put another runway in. Does your plan permit it?

Mr. D. D. Thomas. The present plan does not permit it, primarily because of the airspace problem rather than a runway problem. We do not now land aircraft simultaneously under instrument conditions with a runway separation of 6,700 feet as these will have. We are confident we will see the time in the not-too-distant future when we can do this. This is a matter of turning in on the approach the two simultaneous airplanes on instruments and not overrrunning each other. We would not be able to use additional runways, concrete on the ground, under instrument conditions. Under good weather conditions, under visual flight rules——

Mr. Yates. Will you have visual flight rules in 1965 or 1975?

Mr. Thomas. The point is we most likely will not at this airport. At least everything would be under positive control from the ground. We would run into an airspace and control capability and it is not within our knowledge to use it. Unless we know more in 1965 than now and I hope we do, the chances are if we saturate this airport the only solution will be to use another. Maybe we will learn something by 1965.

Mr. Pyle. There is a further answer that if at the point that we arrive at some date in the future, which is indeterminate at the moment, that you require additional property we may have to buy more land and put in another runway. I think you end up somewhere in the ball park. If you saturate this airport you have to build another one.

Mr. Yates. Will this airport not be saturated in 1965?

Mr. Pyle. No. We are counting on further development of it to meet the 1965 developments which includes additional taxiways and additional means of speeding up handling of aircraft.

Mr. Yates. Do you have a plan in addition to what you presented in this chart which discloses what your intentions are for 1965 and 1975?

Mr. Pyle. Yes, sir.

Mr. Yates. Has it been made available to the committee?

Mr. Pyle. It is of a preliminary nature.

Mr. Yates. Has it been made available to the committee?

Mr. Pyle. These are early plans and can be changed by the time the architects and engineers come up with their final versions.

Mr. Shelley. There are two long runways there. Suppose you have a crash or accident that ties up one runway for several hours. To what extent will that handicap the operation?

Mr. Pyle. This will undoubtedly create a handicap. However, this runway could be used for takeoff under suitable wind conditions and we might have to double up and put landings and takeoffs on the single runway. But the problem is, Should we design for every contingency at perhaps a fantastic cost because this presumably would happen infrequently?

ANTICIPATED TRAFFIC AT AIRPORT

Mr. Yates. Do you have any estimates as to what your 1965 traffic will be?

Mr. Pyle. Yes.

Mr. YATES. What do you anticipate it will be in 1965 and what in 1975?

Mr. HOWELL. We estimate that in 1965 the airport will have a total of 214,000 movements per year, aircraft movements, with handling 5 million enplaning and deplaning passengers. In 1970 the airport will have 308,000 movements per year handling passengers at the rate of 7,700,000 annually. In 1975, 396,000 total movements handling passengers at the rate of 10,400,000.

Mr. YATES. What is the nature of the planes that will be carrying the passengers? Presumably jets, but what capacity of planes? That enters into this calculation; does it not?

Mr. HOWELL. This envisages an increasing use of aircraft, increasing number of passengers per aircraft. In 1965 this estimate is 30.6 passengers per departure on the average. In 1970, 33.8 and in 1975, 37.7. This would of course be a combination of all types of aircraft from the largest jets to some of the local service type.

Mr. D. D. THOMAS. May I make an observation on this question?

Mr. YATES. Yes.

Mr. D. D. THOMAS. We handled at Washington National last calendar year two-hundred-and-seventy-seven-thousand-odd movements. At Chicago Midway we handled four-hundred-and-eight-thousand-odd aircraft movements; 408,000 movements is more than we estimate for the movements at this airport, the new Washington Airport, by 1975. That was handled at Chicago in 1957. Within that framework we can grow.

Additionally, the new airport will handle more traffic than we are able to handle at Chicago Midway for several reasons. One is the better equipment, better approaches and far better facilities at the newer airport. So we should be able to exceed this 408,000 we have already handled. We have no fear, insofar as the runway and taxiway arrangements are concerned that we will be able to handle movements demanded by 1975.

Mr. PYLE. This is a graphic demonstration of the point I tried to make. Here are parallel taxiways in which, for instance, an outbound airplane preparing to take off would come out this way and inbound this way. This dramatically increases the number of movements a single runway can handle.

SELECTION OF ARCHITECTS AND ENGINEERS

Mr. YATES. You say your contracts have or have not been let for the construction of utilities, buildings, and whatever other contracts are necessary?

Mr. HOWELL. No, sir; only the contracts for the design. Those were negotiated.

Mr. YATES. Those are negotiated?

Mr. HOWELL. Yes.

Mr. YATES. You did not use competitive bids?

Mr. HOWELL. Not for professional services.

Mr. YATES. Who did you invite? Just 1 or 2?

Mr. HOWELL. We evaluated approximately 65 proposals from firms of architects and engineers all over the United States. It was in the process of evaluation and elimination and finally some interviews that led us to select the combination of architects and engineers that we

have selected and following which we negotiated with them on the actual cost. The construction contracts will be by competitive bid.

Mr. YATES. That is all.

Mr. SHELLEY. For this, do they set up a joint venture among themselves?

Mr. HOWELL. The contract is with Ammann & Whiteney. The contract will specify that Ammann & Whiteney will associate themselves with Eero Saarinen & Associates as architects, Burns & McDonnell as utility engineers, and Ellery Husted for the master plan.

Mr. PYLE. In response to the point Mr. Yates brought out, we had 65 of the best combinations of firms for architectural and engineering services that were available in the country submit their qualifications and their ideas on this thing. I think we got the top firm in the country. We were very fortunate in our selection.

Mr. YATES. You mean submitted projected pictures and plans?

Mr. HOWELL. More or less their experience and their ability.

Mr. PRESTON. Brochure.

Mr. HOWELL. Yes.

Mr. YATES. What they had done rather than what they proposed?

Mr. HOWELL. That is right.

COMPLETION OF AIRPORT

Mr. FLOOD. When will it be completely finished and completely operational as you projected it with the lace curtains on?

Mr. HOWELL. Our present schedule is to have the airport able to operate by either late 1960 or early 1961 with total completion at the end of 1961.

Mr. FLOOD. Let us give you another year for luck.

Mr. PYLE. Excuse me, Mr. Flood, is the point you want to bring out when will the airport be ready for service? The 1961 date is based on this appropriation and provision of a facility to meet requirements up to 1965.

Mr. FLOOD. Service in 1965.

Mr. PYLE. You mean for 1965 requirements?

CIVIL DEFENSE CONSIDERATIONS

Mr. FLOOD. One year after 1961 and without any question, without any intelligent question, by 1965 Soviet Russia will be operational with ICBM hydrogen missiles. Make no mistake about that. Now, of course, this is not a military airport and no matter where a hydrogen bomb lands, you cannot make any preparations to save anything from it. You get a zero in the middle of your airport; you will have the paint scratched on the building. You can be sure of that. But many people in defense think that Washington, Moscow, the capital cities, will not be targets for obvious reasons. If I were C. O. and going to push a button to throw something at Russia, I would not throw it at Moscow, because I would not want them to throw one here. A gentlemen's agreement, if it is not overstating the phrase. There is a thinking of that among the military people. It is an old custom. Hydrogen warfare will not change it.

Now up 10 or 12 miles on a zero blast, square miles from your area, what provision have you made of any sort, physically and for passen-

gers and things, for protection from blast, fire, concussion, radiation of any sort for the most modern airport in the world, operational at the very year that we all will be operational with ICBM's and most probably Polaris IRBM's launched from under the water from submarines, keeping in mind the Russians have 700 and you can be a target, your area will be a target from a thousand miles at sea from where Chantilly is located? Are you talking at all of this problem with civil defense people, defense people or anybody? If not, why not?

Mr. Howell. We have not had any discussion as to civil defense in regard to development of this airport. It is patent that should we incorporate any of those features in the design our costs will go way up.

Mr. Flood. Is that the only reason why you did not?

Mr. Howell. No.

Mr. Flood. Forget about the cost. Let us talk about the planning.

Mr. Howell. We have designed this as an airport for peaceful commerce. It might have some military significance during a war.

Mr. Flood. I am not talking about any military significance. Any airport can have military significance if needed. Let us forget about that. I am talking about a modern airport on the threshold of fissionable and nuclear war and should it be discussed, should it be considered, is it important, and if not, why is it not?

Mr. Pyle. Mr. Flood, I would like to respond to your point in this way. I think it is a point we should well take into consideration and it will be taken into consideration, shelter areas and radiation protection. But I believe it would be premature to come up with what actual provision we will be able to take in this area.

Mr. Flood. My opinion is you never thought about it until I just mentioned it.

Mr. Pyle. To be honest with you, I agree, as far as I personally am concerned.

Mr. Flood. That makes me a happy man. I cannot understand that. No sense in belaboring that. Nothing will come of that either.

SELECTION OF SITE FOR AIRPORT

Now we first talked about this airport by legislation, according to your justification, in the 81st Congress back in 1950, I think my friend from Illinois indicates Public Law 762 of the 81st Congress, 1950. This is not a new thing. I am not particularly a patient man anyhow. With all the talk that I have put on this and everybody else I should be glad at this point to say that is that; let us get rid of this thing now that it is born, let us get it off the ground and out of this committee. But there are certain things I feel call for a little more legislative patience. Let me point this out to you. Last year, July 1957, President Eisenhower put his full weight behind the Burke site. He sent a message up here on July 25, 1957. The President's message said:

> The alternative solutions have been extensively studied. Considering all relevant factors the responsible executive agencies have concluded that the best available solution is a new airport at Burke, Va., site. Further studies of the problem over the past few months by the Department of Commerce have provided additional support for this conclusion.

He gave his unqualified endorsement to the Burke site. Then, when it was referred to the Congress and to this committee, we voted over 2 to 1 to support the President on that selection and that recommendation. Like that. Now, of course, it was just about a 2-to-1 vote. But that is what happened. Well, the next thing I know there was a commission, a site commission. What I would like to know is this.

The reason I ask this question, Mr. Chairman, is this. We have as part of the staff of the great Appropriations Committee of this House the best possible investigative personnel in the country as has been outlined to us by the chairman of the full committee. I submit to you that the facts and circumstances surrounding this sudden switch in selection of these sites in view of what has been developed in connection with access roads and other matters I will indicate here will indicate that by all means we should request the chairman of this full committee to assign upon the adjournment of Congress to his investigative agencies a full and complete examination and investigation as to why, after a cursory investigation of 5 weeks, a committee should switch the President's position on this thing and most all the other people who were directly concerned at the time, including the recommendations of the Department of Commerce, the CAA, all the major airlines, CAB's endorsement, 12,000 citizens of Fairfax, all the civic associations of Fairfax, and many others that the record will show if anybody looks at it. To build a record here as to upon what sound judgment—and very properly—the President sent his message to us and we approved it, yet 4 months later for no apparent reason at all we get this message.

On July 25, 1957, the President indicated that Burke "is the best site available."

Now, on July 14, 1958, the President sent another message up here, and that is as follows:

> I recommend the selection of the Chantilly site, and at this site I have directed the Civil Aeronautics Administration to proceed with the construction and development of a new public airport.

Just a few months later, for no apparent reason that I can think of—and I am not quarreling with the selection of the site at this point; I am for a second airport, and I hope that they have it built last night—so my remarks are not concerned with changing the site, or the site at Chantilly or anything like that. I want the investigation to examine how did this sudden change take place, in effect, overnight, based on the record we had.

I would also like to know why the J. E. Greiner Co., of Baltimore, Md., was selected as the consulting firm by the Site Selection Committee, and why this was done privately and why it was not done publicly and why bids were not asked for for such a very important and extraordinary mission under extraordinary circumstances, and how this company in 5 weeks was able to pull Chantilly out of a hat when all the professional, dedicated, and great governmental agencies, including the Congress and these committees, were sweating over it for 6 years.

I would like to know why in this Site Selection Committee report there was nothing said at all about the quality and nature of the soil, and reports made in detail on soil examinations or analyses made, because I am advised, and I have information to the effect, that with reference to the soil there was no soil investigation made.

I am advised that some off-the-record remarks were made by CAA employees on the site to this effect: "A fortune would have to be spent on fill at the Chantilly site."

That was one of the big issues in the Chantilly selection—the fact that there would be a tremendous savings with reference to fill, and the soil, at Chantilly, over Burke.

Millions of dollars were going to be saved by that single operation alone. Now, on the contrary, we find out that a fortune will have to be spent on fill at Chantilly.

I would like to know why the Greiner firm report and why the Site Committee report did not tell the Congress in this impartial survey about the sewer costs with particular reference to the affluent removal cost at Chantilly, and why the affluent removal cost at Chantilly would be so high in view of the fact that there was an abundance of water at Burke.

The survey only compared the sewage-treatment plants, and nothing else, but the affluent problem—that of the treatment of water wastes—was not considered at all, nor was the great cost of the piping of water considered.

I would like to know why the railroad accessibility at Chantilly—the Toonerville trolley line that I read about in the Washington Post, which is the width of two railroad ties—was not discussed, and why did not the Site Selection Committee point out that at Burke there were major trunklines of the Southern Railroad, and that there were likewise available at Burke these facilities. None of these things were gone into at all in the 5-week exhaustive survey of the Greiner Co., and yet all these things were examined by the Department of Commerce, the CAA, and the congressional committees, and that is why they agreed on Burke.

Mr. Bow. Will the gentleman yield?

Mr. Flood. Yes, sir.

Mr. Bow. The gentleman has been referring to the Congress agreeing to the Burke Airport. I think the gentleman is absolutely correct insofar as the House is concerned, but I must point out to the gentleman that there was a great deal of controversy in the other body.

Mr. Flood. That is right.

Mr. Bow. And that certain Members of the other body objected strenuously.

Mr. Flood. I think the gentleman has corrected me properly, and well. I am speaking only of the House, of course.

Mr. Bow. But it rather looks now that something was done and taken completely out of our hands; that it was in the supplemental bill passed August 28, 1957, after we had taken action here on Burke, that in the other body there came out of conference a provision that no funds shall be expended for construction and development of an airport until the President shall make a report to the Congress with recommendations as to the site, and the report to be submitted not later than January 1, 1958. So, it was the action of the Congress which upset the will of the House to build Burke.

Mr. Flood. That is right.

Mr. Bow. And put it back to the President, and caused another investigation to be made. I think we should have the record straight on that.

Mr. FLOOD. I think the record should show that, and the gentleman states it well, and it is an eloquent record.

That is all quite true, but those things I would like to have examined. I have no subjective interest, Mr. Chairman, at all in where this spot is. I am making these observations objectively. The course we have developed heretofore in these hearings today, the entire record on the costs of access highways which I want to now incorporate in this part of this hearing for the purpose I have just requested, an investigation without repeating it all over again.

I would like to direct the attention of he who reads this that that be incorporated with reference to the point I make now—the access highway as it was produced today.

Mr. PRESTON. You merely want to make reference to it?

Mr. FLOOD. That is right and to incorporate a "by reference" to it. I want at this point in the record to refer to the Aviation Week magazine for the issue of October 21, 1957, page 25. It is known as the Washington Roundup Column of Aviation Week magazine. The article is headed "Airport Hassle."

There is a flat charge of a built-in prejudice against this J. E. Greiner Co., and I read this quotation:

> Selection of a Baltimore consulting engineering firm to survey Washington's long-drawn-out airport problem is likely to draw fire from backers of Virginia as a site for a badly needed second airport. Charles Allen, a partner in the firm which will undertake the survey in a joint venture with the firm of Hayes, Seay, Mattern & Mattern, of Roanoke, Va., has served as chairman of the State Aviation Commission of Maryland since April 1955.
>
> Maryland has made a vigorous fight for Baltimore's Friendship Airport as a second Washington airport, and recently asked for Quesada's reassurance that Friendship would be included in the study by the engineer.
>
> Allen also testified at the Civil Aeronautics Board Washington-Baltimore adequacy-of-service investigation to support Greater Baltimore committee exhibits describing the Friendship facility from a technical standpoint. He said that J. E. Greiner in association with other engineers was "responsible for the architectural, engineering, planning, development and supervision of the construction" of the airport and added: "We think that it is one of the best in the world."

Now, I read that to you to show that the firm that created Friendship—the man who said it was his brainchild with love and affection—was the man selected to conduct this investigation in 5 weeks, and place the new Washington airport exactly nowhere, between Friendship and Burke, so that there would not be any competition between the new modern world development of jet aircraft as against Friendship, which Burke would not be.

These are the things that should be examined. I am sure, Mr. Chairman, without taking any more of your time now, that from what I have indicated and from what we all know about this and all the facts and circumstances, there is more to this than meets the eye, and I respectfully submit that because of our concern with the dollars involved and with the extraordinary cost that this Chantilly Airport is going to cost us ultimately, in addition to this whole problem of the great cost for access highways, that this calls for the type of investigation that the main Appropriations Committee should examine.

Mr. PRESTON. I assume that you will make your request to the chairman of the full committee?

Mr. FLOOD. No; I make it to you.

Mr. PRESTON. The Chair will be glad to take it under consideration.

Mr. Clevenger, do you have any questions?

Mr. CLEVENGER. No questions.

Mr. PRESTON. Mr. Bow, do you have any questions?

Mr. BOW. Not at this time.

Mr. PRESTON. Well, that concludes the hearings on the Chantilly Airport for the time being, and we will briefly go into the matter of the request for the operation and regulation.

OPERATION AND REGULATION

We will insert at this point in the record pages 8 through 14 of the justifications.

(The pages referred to follow:)

OPERATION AND REGULATION

1959 regular appropriation estimate adjusted to supplemental estimate

	Permanent positions	Man-years	Amount	Cumulative total
1959 regular appropriation estimate	28,182	25,453.0	$230,000,000	$230,000,000
Supplemental estimate:				
Increased workload:				
Flight inspection of facilities	21	15.8	152,546	
Planning, engineering, and supervision, air navigation facilities	71	35.5	295,109	
Personnel, budget, accounting, payroll, supply, and related services	100	60.0	431,000	
Total	192	111.3	878,655	230,878,655
Additional facilities and requirements:				
New facilities	1,283	775.7	6,809,560	
Operational and technical training:				
Air traffic control	370	187.0	1,259,433	
Maintenance and engineering	187	119.5	1,787,352	
In-service improvements	55	47.0	1,000,000	
Increase in minimum salary rates of engineers			1,015,000	
Total	1,895	1,129.2	11,871,345	242,750,000
Total supplemental estimate	2,087	1,240.5	12,750,000	
Total 1959 regular estimate and supplemental	30,269	26,693.5	242,750,000	242,750,000

Increased workload, $878,655.—The new facilities to be commissioned with the funds requested in this supplemental will significantly increase the flight-checking program requirements, and based on our formula an additional 21 positions and $152,546 are requested. The additional facilities and requirements requested herein, including the commissioning of new facilities, operational and technical training and the establishment program for 1959 will place an added burden on the program for planning, engineering, and supervision, estimated to require 71 positions and $295,109. Additional funds in the amount of $431,000 will be needed for supporting services, such as personnel, budget, accounting, supply, and related services. This increased requirement is directly related to the increases requested herein.

New facilities, $6,809,560.—This item is requested to permit the operational use of facilities as they will be ready for service. A review of the program for establishing new facilities supports the estimated dates for completion of work involved in establishing these units and they should be placed in service as scheduled. Whereas the 1959 budget did not provide for full utilization of the

new facilities, this estimate will permit them to be placed in early use. A reconciliation of the types and average months of use by type of facility follows:

Type of facility	Regular estimate		Supplemental		Revised estimate	
	Number	Average months	Number	Average months	Number	Average months
Airport traffic control tower	14	8			14	8
Combined station-tower	1	10			1	10
Separation of combined station-tower facility	2	3	9	3	11	3
Separation of combined center-station facility	1	11			1	11
Radio range: VHF omnidirectional	43	3	44	5 8	87	8
Instrument-landing system	1	10			1	10
Approach light:						
Conversion of nonstandard to standard system	24	11			24	11
Additional standard system	21	6	40	3	61	4
Sequence flashing	30	8	7	3	37	8
Runway and identification lights	25	7			25	7
ATC radar beacon	18	3	9	2	27	3
Long-range radar and related communications	10	4	9	2 2	19	4
VHF direction finder equipment	7	12			7	12
Radio homing beacon	4	12	5	3	9	7
TACAN distance equipment	230	3		3	230	6
Flight assistance station	25	3	4	3 3	29	6
Living quarters	74	5	51	3	125	4
Assume military approach control facilities (9 for maintenance)	11	9			11	9
Flight assistance service interphone		4				4
Rearrangement, expansion, and modernization of terminal interphone equipment		8				8
Expansion of interfacility interphone		5	[1] 10, 800	1 6		6
Increased speed and expand teletypewriter systems		3				3
Low-altitude air-ground communications		2		2		4
Center computer equipment	5	3		3	5	6
Relocate air route traffic control centers:						
Rent and utilities	10	5			10	5
Relocate interphone terminal facilities	12	3			12	3
Building and ground maintenance, Chicago	1	3			1	3
Air route traffic control centers			2	9	2	9
Precision approach radar			6	7	6	7
Fan marker			7	3	7	3
Terminal interphone equipment in RAPCONS				12		12
Additional equipment components				9		9
Expansion of terminal radar service			[2] 14	5	[2] 14	5

[1] Mile.
[2] Areas.

This item also includes funds to recruit personnel in 1959 to operate and maintain the new facilities that will be ready for service early in 1960. Proposed staffing by facility type follows:

Type of facility	Number of facilities	Positions
Long-range radar	10	422
Precision approach radar	7	65
TACAN distance equipment	76	76
VORTAC facilities	11	15
VHF radio range	13	5
ATC radar beacon	10	12
Total		595

Operational and technical training

Air traffic control, $1,259,433.—One of our most significant needs continues to be training of our technical personnel. There is a requirement for 8 instructors and travel funds for 620 additional students for training at the aeronautical center. These students will be replacement trainees for experienced controllers who will be transferred to new long-range radar locations that will be commis-

sioned with funds requested in this supplemental. In addition, funds are requested for 362 trainee positions that are required to provide a reservoir of employees with basic training that will be immediately ready to fill vacancies as they occur.

Maintenance and engineering, $1,787,352.—It will be necessary to further expand the maintenance and engineering training program. The various courses for which additional funds are required in 1959 are tabulated below, together with the additional students that can be trained within the approved 1959 estimate and the June 30, 1958, program level.

	June 30, 1958, student capacity	Additional students, 1959	Total students, regular estimate, 1959	Supplemental	Revised estimate, 1959
Communications equipment	624	----------	624	29	653
ILS/VOR	379	112	491	127	618
Preradar	96	141	237	98	335
Radar	209	218	427	195	622
Air conditioning	----------	32	32	----------	32
Maintenance supervision	----------	224	224	----------	224
Establishment	----------	----------	----------	24	24
Avionics pulse equipment	----------	----------	----------	16	16
Avionics guidance systems	----------	----------	----------	8	8

To accomplish this training an increase of 42 positions will be needed in the instructor staff at the aeronautical center. The greatly expanded training program will require an increase of 145 positions to provide relief for maintenance technicians attending centralized courses.

In-service inprovements, $1,000,000.—This item covers the requirements for improving equipments and facilities in service, for which an increase of $1 million is required. The major project areas concern equipments such as VORTAC, radar, and improvements in communications systems. A more detailed listing of the projects as they were possible under the regular 1959 budget and what would be accomplished under this request is provided in the following tabulation:

Federal airways projects

	Regular estimate, fiscal year 1959	Supplemental	Revised estimate
Program increases: 1958 part-year workload increases	$44,300		$44,300
Projects:			
1. Automatic flight data entry equipment	212,650		212,650
2. In-service improvement of CAA air traffic control computer operation	435,200		435,200
3. In-service improvement of VORTAC	162,390	+$626,180	788,570
4. Operational tests of improved air traffic control equipments and procedures	539,300		539,300
5. VOR stacked antenna array	87,940		87,940
6. High tower VOR	81,000		81,000
7. Improved VOR antenna	75,450		75,450
8. Directional glide path tests	71,450		71,450
9. In-service VOR improvements	38,050		38,050
10. Study of immediate improvements for air traffic control (simulator)	288,000	+17,200	305,200
11. Test improved radar MTI system	167,560		167,560
12. Test improved beacon interrogator antenna system	145,230		145,230
13. Test improved secondary radar siting techniques	35,380		35,380
14. Evaluation of improvements in the ATC radar beacon system	85,770		85,770
15. Immediate improvements in air traffic control displays	166,060		166,060
16. Evaluation of radar remoting equipments	170,000		170,000
17. Development of computer programing for ATC	105,560		105,560
18. Lighting laboratory tests for other segments of CAA	50,360		50,360
19. Flush-type lighting equipment	35,680		35,680
20. Runway surface illumination	73,750		73,750
21. Runway end identifiers	15,250		15,250
22. In-service improvement of sequenced flasher systems	22,520		22,520
23. Test visual course indicators	16,950		16,950
24. Test UHF surveillance radar	30,800		30,800
25. Evaluation of VORTAC airborne equipment	58,100		58,100
26. Develop VORTAC flight inspection techniques and equipment	56,230		56,230
27. Study of zero-zero ILS techniques	86,270		86,270
28. Immediate improvements in ATC communications systems		+321,600	321,600
29. Study of aircraft radar target size		+35,020	35,020
30. Receiver, monitor, and signal generator standardization	57,700		57,700
Total projects program	3,414,900	+1,000,000	4,414,900

Increase in minimum salary rates for engineers, $1,015,000.—Pursuant to Civil Service Commission Department Circular 793, Supplement 33, dated December 9, 1957, the minimum salary rates of engineers and certain scientific specialists have been increased to the top step of grades GS–6 and GS–8 through GS–17. These higher salary rates were effective on December 29, 1957, and the regular estimate for fiscal year 1959 did not reflect the increased fund requirement occasioned by this action. Therefore, the funds requested in this supplemental are required to provide for the additional costs which will result from these mandatory salary increases.

Mr. PRESTON. Mr. Pyle, do you have a statement which you wish to present with reference to this request?

Mr. PYLE. Yes, sir, Mr. Chairman; I have a brief statement which I would like to present.

Mr. PRESTON. You may proceed.

GENERAL STATEMENT

Mr. PYLE. I appreciate the opportunity of appearing before you in support of two items contained in House Document No. 394, which requests $12,750,000 for operation and regulation, and $53,500,000 for construction and development, additional Washington airport.

Through the support of this committee, the Congress has provided for fiscal year 1959 the full amount of the operation and regulation budget as requested of Congress. These items were not included in

our regular budget estimate, and the purposes of this request for operation and regulation are as follows.

1. To assure that the new facilities that are being established to strengthen the Federal airways system may be operated as they are completed and ready for service, $10,735,000 is requested. This amount is required for operating and maintenance costs, including the related workload and technical training of personnel.

2. To improve equipments and facilities that are now in service in the Federal airways system, we are requesting an additional $1 million. It is through this work that we expect to realize more reliability in the actual equipments and increase effectiveness in the use of equipments, possibly including some reduction in costs of operation and in the manpower required to maintain and operate the facilities of the types now in use.

3. The request includes $1,015,000 to cover the costs of the salary increase authorized by the Civil Service Commission for engineering personnel, which became effective December 29, 1957.

As we indicated to the committee at the time we appeared in connection with our regular appropriation request, we have been carefully reviewing the rate of progress made in establishing new facilities that will be ready for service in 1959 and 1960. This request is for funds that will permit all the new facilities to be placed in service as they are ready. The facilities include radar units, radio ranges, approach lights for airports, and other equipments that will increase the effectiveness of the Federal airways system. In addition to permitting the new equipments to be placed in service as rapidly as they can be completed, the request provides for some training of personnel in 1959 in preparation for facilities that will be ready for service early in fiscal year 1960. This training item is of great significance, in that unless the people may be recruited and trained prior to the time the equipments are completed, there is a loss of months before the equipments are serviceable. These equipments represent substantial costs and need be placed in service as rapidly as possible.

Mr. PRESTON. The Chair wishes to make this observation: During the regular hearings on the bill the purpose of this $12,750,000 request was discussed, and it was established that the request had been made of the Bureau of the Budget but that an amount of $22,683,000 had been deleted by the Bureau of the Budget. Is that correct?

Mr. PYLE. That is correct, Mr. Chairman.

Mr. PRESTON. And, now, you are seeking the major items that we discussed during the regular hearings?

Mr. PYLE. Yes, sir; this request is for the funds needed to operate all the new facilities that will be ready for service.

Mr. PRESTON. You requested of the Department, $254,448,000, and the Department allowed $252,683,500. After you left the Bureau of the Budget you came out with $230 million which the committee allowed?

Mr. PYLE. That is correct.

Mr. PRESTON. We will insert in the record at this point a chart which identifies the items which were deleted in the Department, and also in the Bureau of the Budget.

(The chart referred to follows:)

U. S. Department of Commerce, Civil Aeronautics Administration

1959 budget estimate—recapitulation of request of the Department to the request of the Congress

Operation and regulation	Positions	Amount
Requested of the Department	31,006	$254,448,000
Commerce Department allowance		252,683,500
Items deleted or curtailed to come within the request to Congress of $230,000,000:		
Federal airways:		
New facilities	−2,165	−14,279,137
Development and evaluation (including a simulator)	−40	−3,061,200
New region	−193	−1,931,304
Emergency readiness	−12	−267,000
Workload increase	−188	−1,194,314
Annualization		+260,746
Subtotal	−2,598	−20,472,209
Flight operations and airworthiness:		
Workload increase	−11	−125,800
Development and evaluation	−41	−444,500
Emergency readiness	−2	−254,000
New region	−68	−617,700
Miscellaneous items	−13	−480,000
Subtotal	−135	−1,922,000
Airports:		
Development and evaluation	−17	−270,500
Emergency readiness	−6	−98,000
New region	−36	−343,400
Miscellaneous adjustments	−5	+46,400
Subtotal	−64	−665,500
Civil defense and mobilization	−27	−1,348,000
Leases transferred to GSA		−40,291
Total congressional request (Bureau of the Budget allowance)	28,182	230,000,000

Mr. Preston. In view of the fact that the committee has discussed these items previously in the hearings on the 1959 regular bill, we will not go into the details of it as we would normally.

We understand that the primary purpose of this money is to put into operation facilities—navigation facilities and various communication devices and aids to navigation—that have heretofore been appropriated for?

Mr. Pyle. That is correct.

Mr. Preston. And that are needed to be put into operation in order to bring your system up to a normal degree of efficiency; is that true?

Mr. Pyle. That is correct, Mr. Chairman, at the earliest possible date that we could, and this is the money that will be required.

Mr. Preston. Does anyone have any questions to ask on this particular item?

(No response.)

Mr. Preston. That concludes the hearing.

Mr. Yates. Mr. Chairman, you have a weather request for the National Aviation Weather System. Does this group have to testify again?

Mr. Preston. They are not scheduled to testify in support of it. However, I think they could certainly shed some light on it.

Off the record.

(Discussion off the record.)

Mr. Preston. Gentlemen, thank you very much.

That concludes the hearing for today.

THURSDAY, JUNE 26, 1958.

BUREAU OF FOREIGN COMMERCE

WITNESSES

HENRY KEARNS, ASSISTANT SECRETARY FOR INTERNATIONAL AFFAIRS
GEORGE T. MOORE, ASSISTANT SECRETARY FOR ADMINISTRATION
OSCAR H. NIELSON, DEPARTMENTAL BUDGET OFFICER
LORING MACY, DIRECTOR, BUREAU OF FOREIGN COMMERCE
REX A. ANDERSON, EXECUTIVE OFFICER
ROBERT E. SIMPSON, DIRECTOR, OFFICE OF ECONOMIC AFFAIRS
JOHN C. BORTON, DIRECTOR, OFFICE OF EXPORT SUPPLY
FRANK B. GATCHELL, BUDGET OFFICER, CUSTOMS, TREASURY

Mr. PRESTON. The committee will come to order.

EXPORT CONTROL

We will take up this morning several items in House Document No. 394 for the Bureau of Foreign Commerce.

The first item we shall take up this morning is "Export control," and we shall insert in the record at this point pages 1 through 6 of the justifications.

(The material referred to follows:)

(H. Doc. 394)

Export control

Budget estimate (1959)	0
Revised budget estimate (1959)	$3,060,000
Request, needed July 1958	3,060,000

PURPOSE AND NEED FOR SUPPLEMENTAL FUNDS

In anticipation of the enactment of the 2-year extension of the Export Control Act of 1949 (S. 3093), the $3,060,000 is requested to cover operations for the fiscal year 1959.

Summary of requirements

	1958 estimate			1959 estimate			Increase or decrease		
	Position	Average number	Amount	Position	Average number	Amount	Position	Average number	Amount
Bureau of Foreign Commerce:									
Personal services:									
Office of Director	1	1.0	$6,250	1	1.0	$6,250	----------	----------	----------
Administrative management staff	8	8.0	39,220	8	8.0	39,220	----------	----------	----------
Investigation staff	23	22.4	153,366	23	22.8	156,230	----------	+0.4	+$2,864
Office of Economic Affairs	25	23.8	137,528	23	22.7	131,419	−2	−1.1	−6,109
Office of Trade Promotion	8	8.0	39,215	8	8.0	39,610	----------	----------	+395
Office of Export Supply:									
Office of Director	10	9.4	78,366	8	7.9	69,982	−2	−1.5	−8,384
Agricultural and Chemical Division	19	16.5	115,395	19	18.4	129,091	----------	+1.9	+13,696
Finished Products Division	15	14.9	103,405	17	16.5	112,941	+2	+1.6	+9,536
Materials Division	20	19.3	131,055	19	18.8.	132,176	−1	−.5	+1,121
Producers Equipment Division	20	19.3	145,705	20	19.4	145,590	----------	+.1	−115
Operations Division	87	83.1	416,262	78	74.9	387,557	−9	−8.2	−28,705
Strategic Control Division	17	16.3	113,233	18	17.6	124,834	+1	+1.3	+11,601
Total, Office of Export Supply	188	178.8	1,103,421	179	173.5	1,102,171	−9	−5.3	−1,250
Total permanent	253	242.0	1,479,000	242	236.0	1,474,900	−11	−6.0	−4,100
Other personal services	----------	----------	5,700	----------	----------	5,800	----------	----------	+100
Total personal services	----------	----------	1,484,700	----------	----------	1,480,700	----------	----------	−4,000
Other objects	----------	----------	249,700	----------	----------	253,700	----------	----------	+4,000
Total, Bureau of Foreign Commerce	----------	----------	1,734,400	----------	----------	1,734,400	----------	----------	0
Advisory Committee for Export Policy:									
Personal services	12	12.0	105,600	12	12.0	105,980	0	0	+380
Other objects	----------	----------	14,400	----------	----------	14,020	----------	----------	−380
Total Advisory Committee for Export Policy	12	12.0	120,000	12	12.0	120,000	0	0	0
Field service:									
Personal services	16	15.0	99,200	16	15.0	99,100	0	0	−100
Other objects	----------	----------	7,000	----------	----------	7,100	0	0	+100
Total, field service	16	15.0	106,200	16	15.0	106,200	0	0	0
Transfer to Office of the Secretary	----------	----------	93,400	----------	----------	93,400	----------	----------	0
Transfer to Bureau of Customs	----------	----------	1,006,000	----------	----------	1,006,000	----------	----------	0
Total estimate or appropriation	281	269.0	3,060,000	270	263.0	3,060,000	−11	−6.0	0

EXPORT CONTROL JUSTIFICATIONS

This estimate requests an appropriation of $3,060,000 for fiscal year 1959 for funds required to maintain the export-control program at the current level.

In accordance with the Export Control Act of 1949, as amended, the program is carried forward to serve the double objectives clearly intended by the Congress, namely: (*a*) to withhold strategic commodities from the Soviet bloc and (*b*) to maintain close surveillance and, where necessary, impose quantitative limits—over exports of commodities which are scarce in the United States. No increase in staff is contemplated in this estimate. Anticipated workload and continued economic penetration in many underdeveloped countries by the Soviet bloc rule out the likelihood of any substantial relaxation of controls or reduction in staff during fiscal year 1959.

Short supply controls

Short supply controls have largely disappeared from the export-control program but have persisted as a nettlesome problem on a very few important commodities, e. g., iron and steel scrap, rerolling rail, nickel, industrial diamonds, and Salk vaccine. Lively interest in these commodities persists as evidenced by testimony and questioning during recent congressional hearings on extension of the Export Control Act of 1949.

Strategic controls

The activity of depriving the Soviet bloc countries of strategic commodities is currently the main burden of the export-control program. There are changes in locale or emphasis from time to time, but Soviet efforts to obtain strategic goods continues—relentlessly and unabated. There are currently five situations worthy of special note.

(*a*) *Exports to Poland.*—During fiscal year 1958 export controls over shipments to Poland were significantly relaxed as a part of a shift of United States policy in our relations with that country. As a result of this policy shift, and the related $95 million loan, exports to Poland during the coming fiscal year are expected to run at a rate approximately 15 times the rate of a year ago, and export licensing problems will be radically increased and complicated.

Export license applications, which for years have been rejected out of hand, may now be approved if there is satisfactory evidence that the commodities covered by the applications are for peaceful uses in Poland. The examination of an export license application, including a prelicensing check abroad, frequently represents the last clear chance to examine export transactions in this area. Although there is a "calculated risk" in releasing these shipments, there have been no reports of illegal transshipments. To date the extra time and attention required to handle Polish applications seems to be amply justified.

(*b*) *Increased Soviet buying.*—For most of the 10 years since United States security export controls were first imposed Soviet Russia and the European satellites have studiously ignored the United States as a direct source of supply. In the past months, however, there has been a marked increase in the interest in buying goods from the United States. Chemical plants, synthetic yarn processing equipment, tire plants, and other types of advanced machinery and materials, both strategic and nonstrategic, have recently been the subject of inquiry by the Soviet bloc nations.

As with all shifts in Soviet policy the reason for this change in practice is not evident. Abviously, extreme wariness is indicated and each of these proposals comes in for very careful review by the Department of Commerce and other interested agencies of Government.

(*c*) *Control of advanced technical data.*—The Soviet bloc countries, particularly the U. S. S. R., have intensified their efforts to obtain United States plant design and industrial production techniques respecting strategic as well as nonstrategic equipment. This interest is shown in inquiries and by direct application to BFC for licenses, but even more particularly by efforts to obtain the technical data via third countries.

Recent evidence of Soviet scientific advances has made it more important than ever that the United States have increased access to Soviet scientific knowledge. Accordingly, the United States Government has been encouraging exchanges of unclassified scientific information with the U. S. S. R.

This increased activity—on our part to obtain more information concerning Russian developments and on the Soviet's part effort to obtain data regarding advanced technology—has made particularly difficult the administration of

export controls over shipments of technical data to the Soviet bloc. Notwithstanding these difficulties, considerable success has been achieved in limiting the exportation of unpublished advanced technical know-how respecting industrial processes for the production or utilization of strategic equipment.

(*d*) *Near East.*—During fiscal year 1958 while Soviet diplomatic and economic activity in the Near East was at a very high pitch it was necessary for the United States to pay special attention to licensing of certain paramilitary items to destinations in this area. Although the situation is not quite as explosive as a year ago, we have continued almost daily collaboration with the State Department in attempting to limit shipments of quasimilitary items to the area at levels which would permit the normal growth of the civilian economy and, at the same time, prevent an increase in tension through excessive military purchases.

(*e*) *Compliance proceedings on behalf of the Department of Defense.*—The disposal of surplus military material located overseas is the responsibility of the Defense Department. However, at the request of Defense, Commerce has agreed to process cases under the Export Control Act to punish violators who attempt to dispose of such surplus material behind the Iron Curtain.

Application workload

One of the continuing tasks in administration of export controls is dealing with the daily flow of export license applications. The number of such applications has been relatively constant for the past several months at 750 applications per day (based on application intake from July 1, 1957, through March 15, 1958). It is expected that application intake will continue through fiscal year 1959 at about the same level.

Mr. PRESTON. We have with us the Assistant Secretary for International Affairs, Mr. Henry Kearns, and we shall be glad to hear from you at this time, Mr. Secretary.

Mr. KEARNS. I have a brief statement on this. We have two items to cover before we get through, Mr. Chairman, but we will take up export control first.

If I may, I should like to read this brief statement.

Mr. PRESTON. Proceed.

GENERAL STATEMENT

Mr. KEARNS. I am here to request funds necessary for administration of export controls during fiscal year 1959. Earlier this session both Houses of Congress voted to extend the Export Control Act of 1949, as amended. The request of $3,060,000 is our estimate of funds required to carry out the program directed therein by the Congress.

United States export controls are one of the continuing manifestations of the cold war. For more than 10 years now, the Department of Commerce has been exercising controls over exports to deny American strategic goods for building the Communist war potential. During the same period export controls have been used to conserve the domestic supply of scarce materials, and to further United States foreign policy objectives.

All of these program objectives will continue to be served, with a preponderance of our efforts currently going into the withholding of strategic commodities from the Sino-Soviet bloc of nations. In our formal request for funds we have attempted, wherever possible, to quantify information related to anticipated workload.

Funds are requested to continue the export control program at approximately the present level of operations. This appropriation request does not contemplate any radical shift—for either better or worse—in the world situation which would substantially change the workload in administration of United States export controls.

I might say, Mr. Chairman, that the reason this was not included in our original budget request was that the Congress had not acted upon the continuation and so we had to handle it as a supplemental.

ITEMS UNDER CONTROL

Mr. PRESTON. How many items do you have under control?

Mr. KEARNS. Mr. Borton, the Director of our Office of Export Supply, will answer that.

Mr. BORTON. 922 at the present time.

EMPLOYMENT

Mr. PRESTON. What is the level of your employment in this agency?

Mr. BORTON. The Office of Export Supply is part of the Bureau of Foreign Commerce.

Mr. PRESTON. How many people do you have employed?

Mr. BORTON. In the Office of Export Supply alone at the present time there are 172, but the total employment on the whole export control program, including people who work in the field offices and the staff of the Secretary of Commerce is 260 at the present time.

Mr. PRESTON. There is no increase in the estimate for 1959 over 1958? It is the same figure?

Mr. BORTON. Identical.

Mr. PRESTON. Any questions on this item?

POLICY DETERMINATION

Mr. FLOOD. I should like to know, Mr. Chairman, how much of this is policy and how much of this program is handled by the Department of State or by the Department of Commerce.

Are you laboring under the impression, Mr. Secretary, that you are in charge of this policy or that the Secretary of Commerce is in charge of this policy?

Mr. KEARNS. We administer the program.

Mr. FLOOD. As dictated by the Secretary of State?

Mr. KEARNS. No; by the interagency board, the Export Advisory Committee. It is made up of the Secretary of State, Defense, ODM, and so forth. They determine the policy and we administer it.

Mr. FLOOD. You do not determine policy; you are merely an administrative agency?

Mr. KEARNS. We have a voice in the policy.

Mr. FLOOD. You have 1 vote and 1 voice on a committee that determines policy?

Mr. KEARNS. In addition we supply the technical knowledge and technical direction.

Mr. FLOOD. How long have you been on this job? How long have you been wearing this hat?

Mr. KEARNS. Just about a year.

Mr. FLOOD. Then there is no reason to beat you over the head. Many years ago I was enamoured of this reciprocal trade program and I voted for it and had stardust in my eyes because I thought it was a reciprocal trade program; but I found out it was primarily a political weapon exercised by the Department of State—I am sure

for what they thought was in the best interests of the United States—but I have become pretty confused about your program. I want to be sure the Department of Commerce has one voice in determining the policy as well as, when it gets to your shop, administering it.

Mr. KEARNS. We do in export control. I am confining myself now to export control.

Mr. FLOOD. I was not going to bring that up at all except on the last page of your statement, which you did not read——

Mr. KEARNS. That is the next item. We have two items we are going to discuss this morning.

Mr. FLOOD. Then we will wait.

Mr. PRESTON. Mr. Bow.

Mr. BOW. No questions.

SALARIES AND EXPENSES

Mr. PRESTON. The next item we shall take up is "Salaries and expenses," and we shall insert in the record at this point pages 1, 2, 3, and 4.

(The material referred to follows:)

Salaries and expenses

(H. Doc. 394)

Budget estimate (1959)	$2,448,000
Revised budget estimate (1959)	2,648,000
Request needed, July 1958	200,000

PURPOSE AND NEED FOR SUPPLEMENTAL FUNDS

Almost daily from Africa, Latin America, and Asia comes new evidence of the rapidly expanding economic penetration tactics of the Soviet bloc. The Bureau of Foreign Commerce must furnish United States businessmen with the necessary detailed economic and investment information which is an essential prerequisite to increased trade and investment under severely competitive world conditions. In Europe the much-discussed Common Market and free-trade area is bringing many more businessmen to the Bureau for advice on how best to live in this radically new climate.

Increased world trade will bring problems as well as great benefits to the United States business community. In order to minimize any potentially disruptive domestic effects the Secretary of Commerce has the responsibility of chairing a committee to advise and assist the President on the administration of the reciprocal trade program. The important staff work necessary to keep this committee fully informed must be carried out by the Bureau.

Justification

	Positions	Man-years	Amount
Personal services:			
Trade policy	18	15.3	$101,510
Promotion of United States private foreign investment	10	7.7	37,690
Total personal services	28	23.0	139,200
Other objects			60,800
Total request			200,000

TRADE POLICY

By Executive Order 10741, dated November 25, 1957, the President established a seven-member Cabinet Committee to advise and assist him in the administration of the reciprocal-trade program as authorized by law. Chaired by the Secretary of Commerce, the Committee also consists of the Secretaries of State, the Treasury, Defense, the Interior, Agriculture, and Labor or alternates designated by them pursuant to terms of the Executive order. Provision is also made for participation by other agencies when matters of interest to them are under consideration.

In establishing the Committee the President stressed the importance of the reciprocal-trade program in the field of foreign economic policy and the need for its constant consideration by this Cabinet-level Committee "with increased responsibility in the Secretary of Commerce, who is responsible for the development of foreign and domestic commerce."

The functions of the Trade Policy Committee are (1) to make recommendations to the President on basic policy issues arising in the administration of the trade agreements program, which, as approved by the President, shall guide the Interdepartmental Committee on Trade Agreements; (2) advise the President with respect to the recommendations made by the Trade Agreements Committee to the President; and (3) make recommendations to the President as to what action he should take on escape-clause reports submitted by the Tariff Commission.

In carrying out these functions, the Committee will be concerned with the following types of activities:

(1) Recommendations with respect to tariff negotiations, including compensation cases;

(2) Review and recommendations in escape-clause cases;

(3) Recommendations in certain other tariff matters such as the use of the Geneva Wool Reservation;

(4) Recommendations on United States positions with respect to any voluntary export arrangements of foreign countries; and

(5) Recommendations on other policy issues arising in the administration of the trade agreements program including all policy positions papers for the GATT.

In order to implement these activities, the Executive order establishing the Committee requires that agencies of Government shall furnish available information upon request of the Committee for use in carrying out its assigned functions. In view of the expanded role of the Secretary of Commerce, as indicated by the President when he established the Committee, it is proposed that the Department of Commerce shall provide specific technical and administrative implementation for the Committee's activities.

Support for implementation of the Trade Policy Committee will be provided by an executive secretary and small staff which will act as a central point of coordination for information and documents required by the Committee in carrying out its assigned functions. The executive secretary will have regular contact with Federal agencies providing information required by the Committee. More specifically, he will have contact with the Tariff Commission on reports and other materials pertaining to escape clause actions, the Interdepartmental Committee on Trade Agreements on all recommendations sent by the Committee to the President, and with any agency which presents to the Committee basic problems of world trade policy. In addition, this staff will engage in research and preparation of reports as requested by the Committee.

Additional Commerce Department responsibilities for developing and determining United States trade policies impose additional dutes on the Bureau of Foreign Commerce. Other activities of the Bureau related to trade policy work carried on in the past will become more intense and broader in scope. These added and broadened functions will include work on matters related to international trade problems policy analysis, and support of top level trade policy determination. Much of it will consist of staff support of the Trade Policy Committee, and particularly staff support of the Chairman. This support will apply to matters passed on to the Trade Policy Committee from the Trade Agreements Committee requiring additional research, analysis and study. Thus in the case of the Geneva Reservation matter it was necessary to study and determine fabric definitions, determine effects of exempting various types of fabrics, etc.

Staff support will also be required in the consideration of policy issues involved in Trade Agreements Committee recommendations and proposals transmitted

to the President through the Trade Policy Committee. This will involve maintaining liaison with the Trade Agreements Committee and its staff so that these issues can be determined in advance, thus making possible needed staff work for prompt and adequate consideration by the Trade Policy Committee. This work will include analysis of issues, the effect of proposed policies on trade, and other related matters, as well as preparation of findings for consideration of the Trade Policy Committee.

It is expected, too, that the Commerce Department will take a more active role in the Trade Agreements Committee and gradually expand the basic decisions on trade policy by more active influence on Trade Agreements Committee actions and decisions. This stepped-up activity will require adequate staff and measures for preparation.

Proper fulfillment of the added responsibilities will require a broader type of statistical research needed for analysis of the effect on trade of present and proposed economic policies. This research is needed to determine the effect of past policies; to determine trade development and trends upon which appropriate trade policy must be based, and to generally provide an accurate factual basis for appraisal of policies.

Examples of this type of studies are found in the papers prepared for the Boggs Committee (Role of Foreign Trade in the United States Economy; International Comparisons of Tariff Levels—Their Nature and Significance; Recent Developments in United States Foreign Trade, etc.).

An important field of this work would be analysis of international trade in particular industries in connection with policy decisions required for tariff negotiations and broad commercial policy planning. The pressure for policy decision on such matters is constant; accurate and thorough knowledge of trade conditions and developments in these commodities is needed for proper judgment.

Mr. PRESTON. This is a request in the amount of $200,000.

Mr. KEARNS. Yes, sir.

Mr. PRESTON. What is the reason you want this supplemental amount? You must make a good case of this, I assure you.

Mr. KEARNS. I understand that and I hope we can. This gets into the discussion we held here before. I have a very brief statement on this and if I may use it for background, then I can get into the discussion.

GENERAL STATEMENT

Recent and accelerated developments have made it necessary for us to ask for a supplement to our fiscal year 1959 appropriation for the Bureau of Foreign Commerce regular activities. United States firms now operating in European countries must reappraise their entire investment and export programs in view of the proposed European Common Market. Over 200 direct inquiries were received by the Bureau alone during the month of May. Businesses of all sizes and with a wide range of interests were represented. The Bureau at present lacks the resources to adequately handle and properly inform businessmen on the multitude of problems involved. Seventy-five thousand dollars is requested for 10 additional positions and related expenses.

The Secretary of Commerce, who has the responsibility for the development of foreign and domestic commerce, has been appointed by the President as chairman of a Cabinet-level committee to advise and assist him in the administration of the reciprocal-trade program.

Mr. FLOOD. What was that sentence? Not so fast. That is a beautiful sentence. What is that again?

Mr. KEARNS. The Secretary of Commerce, who has the responsibility for the development of foreign and domestic commerce, has been appointed by the President as chairman of a Cabinet-level com-

mittee to advise and assist him in the administration of the reciprocal trade program. In order to carry out this responsibility the Secretary must be supported by an adequate staff to provide specific technical information on a wide variety of policy problems which will arise. The staff will analyze Tariff Commission reports and other materials pertaining to escape-clause actions and review the recommendations of any agency on basic problems of world trade policy. To carry out this work the staff must engage in research and preparation of reports on its own initiative and as requested by the committee. Previous activities of the Bureau related to trade policy work will become much more intense and broader in scope. $125,000 is requested for 18 additional positions and related expenses.

Now if I might give you the reason why this was not included in our original budget request.

The original budget requests were compiled last October or thereabouts. Since that time the Department of Commerce has been asked or requested or directed to take a much greater part in the formulation of trade policy within the executive branch of the Government. The recently created Trade Policy Committee, which is made up of Cabinet-level members of seven agencies, devote a good deal of their time to the economic interests of the country, including the Departments of State, Defense, Agriculture, Treasury, Labor, Commerce, and Interior. The Chairman of this Committee is the Secretary of Commerce.

This, in answer to your question, Mr. Flood, is an entirely different——

Mr. Flood. This is an attempt to answer my question.

NEED FOR STRENGTHENING WORLD TRADE POLICY FUNCTIONS OF THE DEPARTMENT

Mr. Kearns. This is a different posture than we have on the export control, because in this case the Secretary of Commerce, the Department of Commerce, is given the responsibility of providing the leadership in determining world trade policy. In the work dealing with the Trade Policy Committee we are required to produce information and studies for the benefit of the Secretary and for those who are establishing and working on trade policy that is beyond our present capability from a manpower standpoint, and we found in the light of these new circumstances that to do that job adequately and to give the business interests of this country the kind of representation we feel they need, we do need some additional capability, and that is the reason we are asking for the additional positions.

Mr. Preston. Is that not a normal function of your Bureau?

Mr. Kearns. It is a normal function of the Bureau expanded, yes.

Mr. Preston. So what you are saying to us today is that you want to strengthen your Bureau to do the things you would be normally expected to do?

Mr. Kearns. Yes, that is true; but there are 2 or 3 things that have happened of late. One is, it is obvious that the Soviets have embarked upon a very strenuous program of economic penetration.

Mr. Preston. We certainly realize they are doing that in South America.

Mr. KEARNS. They are doing it all over the world. The way to control it is to set in force all the power we have through our private enterprise and to provide leadership and guidance where necessary in the Federal Government. We do not do in the Department of Commerce anything that business can do for itself, but there is a good deal that business cannot do in the world-trade business, such as the accumulation of information, and things of that kind are things we should do and do more so. If we do not, the Soviets, we believe, will penetrate more than they have.

Mr. PRESTON. You are assuming business cannot do for themselves things you can do and that you, by employing more people, can promote business abroad by United States firms?

Mr. KEARNS. We can supply information needed by business, particularly small- and medium-sized businesses.

WORK OF ADDITIONAL PERSONNEL REQUESTED

Mr. PRESTON. We were assuming all the time we had a bureau that was doing this very thing, the Bureau of Foreign Commerce. It is a little baffling to me why you need all these extra people if your present organization is as good as you said it was. What will these extra people do that is not being done today?

Mr. KEARNS. Two or three things. In the first place, there is a great mass of economic information coming from all over the world.

Mr. PRESTON. From what source?

Mr. KEARNS. From our Foreign Service, the embassies, by and large.

Mr. PRESTON. You are getting that today?

Mr. KEARNS. Yes.

Mr. PRESTON. What do you do with it?

Mr. KEARNS. We analyze it, we catalog it, we answer questions from the business community, and we prepare publications that are distributed to the business community.

The other phase of our work is that we report business problems back to our Foreign Service in an attempt to solve their problems. This is increasing. It is not a static matter. We do not get the same number of informational pieces coming in, nor the same number of requests. We get more of them. And we must be able to more adequately answer the questions of business than ever before.

NUMBER OF PERSONNEL

Mr. PRESTON. How many employees do you have?

Mr. MACY. 297 at the present time.

Mr. PRESTON. How many did you have 5 years ago?

Mr. MACY. A little over 400. I can get that exact figure for you. but it is over 400.

Mr. PRESTON. I would like to have the exact figure.

Mr. MACY. We will get it for you.

Mr. PRESTON. I do not understand why you should have had that many 5 years ago as against 297 this year. Have you had substantial cuts in the last 5 years?

Mr. MACY. We have absorbed pay raises.

Mr. PRESTON. But we have not cut you?

Mr. Anderson. Not substantially, but there have been cuts.

Mr. Preston. Since I have been chairman I think the biggest cut was $50,000 in any one fiscal year.

Mr. Anderson. We will supply that for the record, Mr. Chairman.

QUESTION AS TO NEED FOR ADDITIONAL PERSONNEL

Mr. Preston. Yet us let the record show what the facts are:

In 1955 you had a budget request of $2,800,000. The committee did cut you that year to $2 million. That was a reduction of $800,000.

In 1956 you had a budget request of $2,200,000 and that was reduced to $2 million, the same figure as 1955. You had a supplemental of $130,500 which was granted.

In 1957 you had a budget request of $2,450,000 and the committee reduced it by $50,000. It gave you $2,400,000.

In 1958 you had a budget request of $2,645,000 and the committee allowed you $2,353,000, a cut of about $250,000.

In fiscal 1959 you have a budget request of $2,248,000 and the committee reduced it by 48,000, or appropriated $2,200,000.

I find it difficult to understand what situation has developed in the last 12 months that would make it necessary for you to have these additional employees. If you are doing your job properly and every person is performing his function as he should, I do not understand why you would find it necessary to request these additional positions.

Mr. Kearns. I do not believe we have been doing as good a job as we should have in the past. There have been things we have had to reduce because we did not have sufficient staff, such as service to the investing community, to the insurance community, to the transportation community, and so forth. We had to reduce those services because we did not have enough staff.

RESPONSIBILITY FOR FORMULATION OF TRADE POLICY

We have superimposed over what we had last October, the services and research necessary to provide the Secretary and his staff what they need to discharge their responsibility of leadership in the formulation of trade policy. The Department of Commerce has not had a major role in the formulation of trade policy until the last few months. This puts on us the responsibility of knowing what we are talking about whenever we are talking with other agencies and with Congress.

Mr. Preston. Who made that determination of policy heretofore? The Department of State?

Mr. Kearns. Largely by the State Department with the Department of Commerce as a voice. As it is now, we believe it is in the interest of the economic life of the country for the Department of Commerce to take an increased leadership in the formulation of trade policy.

Mr. Preston. Do you mean the State Department has turned over that responsibility of formulation of trade policy to the Commerce Department and the Department of Commerce has a new responsibility it did not have before?

Mr. Kearns. Yes.

Mr. FLOOD. Just a moment. That was quite a question and you glibly answered "Yes." You had better have the question read back.

Mr. PRESTON. The reporter will please read the question.

(The question referred to was read as above recorded.)

Mr. KEARNS. I will say that in November an Executive order was issued by the President, Executive Order 10741, in which it designated a Trade Policy Committee to be the Adviser to the President on matters of foreign trade policy, the Committee to be Chaired by the Department of Commerce.

Mr. PRESTON. Does that relate to reciprocal trade also?

Mr. KEARNS. It relates to whatever the world trade policy is of the United States and all factors involved. This Trade Policy Committee becomes then the official Adviser to the President, and that does give the Commerce Department a much greater responsibility than we have ever had before. In the past we have been one of the agencies that advised the President, but the leadership did fall in the hands of the State Department. Under this new Executive order the Commerce Department is required to provide the leadership, and that does put considerably more obligation upon us in research and in the preparation of material and our access to material in the field and all those functions.

ACTIVITIES OF BUSINESS AND DEFENSE SERVICES ADMINISTRATION

Mr. PRESTON. Where does Business and Defense Services Administration fit into this picture? Are their activities related to those you are talking about?

Mr. KEARNS. We are fortunate to have the services of BDSA. They are on a commodity basis in their contacts with industry, and they give us the full benefit of their information.

Mr. PRESTON. Do you use them as an arm of your organization?

Mr. KEARNS. Yes, sir.

Mr. PRESTON. So actually it is an integral part of your function?

Mr. KEARNS. It is a part of the Department of Commerce.

Mr. PRESTON. I know it is a part of the Department of Commerce. I am talking about its being a part of your Bureau of Foreign Commerce?

Mr. KEARNS. No, sir.

Mr. PRESTON. I know officially it is not, you set it apart in 1955, but it operates in the same field you are describing now to the committee?

Mr. KEARNS. It supplements what we would be doing.

Mr. PRESTON. It is an arm of your Bureau?

Mr. KEARNS. That is right. It gives us strength.

Mr. PRESTON. It had an increase in its appropriation for 1959, did it not, the BDSA?

Mr. NIELSON. Yes.

Mr. PRESTON. How much was the increase, $1 million or $1.3 million?

Mr. NIELSON. It was somewhere in the neighborhood of about a million dollars.

Mr. KEARNS. That would not necessarily——

Mr. PRESTON. I understand. I know what you are going to say. I have already anticipated that.

Mr. Secretary, you were before the committee when, in April?

Mr. KEARNS. Yes, sir.

Mr. PRESTON. You did not call this situation to our attention at that time?

Mr. KEARNS. That is right, sir.

Mr. PRESTON. What is the date of that Executive order?

Mr. KEARNS. November 25.

Mr. PRESTON. 1957?

Mr. KEARNS. Yes. The reason I did not, Mr. Chairman, was it was in the hands of the Bureau of the Budget.

Mr. PRESTON. What is so sacred about that? If a situation exists in your Department that is as important as you say it is today, why keep it secret from the committee at that time? Are you subject to reprisal if you let a little secret out when it is pending before the Bureau of the Budget?

Mr. KEARNS. No. I think you can blame it on my inexperience.

Mr. PRESTON. Now, Mr. Secretary, there are other people here more experienced than you are. Mr. Moore and Mr. Nielson are old hands on Capitol Hill and they did not mention it. So I do not think you can hide behind the cloak of inexperience.

Mr. KEARNS. I did not think it was apropos.

Mr. PRESTON. If this was something new and essential the committee should have been apprised of it in April.

Mr. KEARNS. I will just have to fall back on what I just said, that I did not think it was apropos.

Mr. PRESTON. Did you appeal the cut we made in the Bureau of Foreign Commerce to the Senate committee?

Mr. KEARNS. No.

Mr. PRESTON. Any questions, Mr. Flood?

Mr. FLOOD. Yes, sir. You touched on what I think I want to develop, Mr. Chairman. November 25. You knew and your staff knew that it had been considered by your Department, that your people had been consulted about it, and that this was a matter of major policy, revolutionary in the philosophy of this law, and despite this basic fundamental change in the philosophy of a law passed by Congress, you were a part of a conspiracy of silence to keep from this subcommittee any inkling that this was pending at the time you testified before us. Is that not a fact?

Mr. KEARNS. No, not quite.

Mr. FLOOD. What part do you not like, a conspiracy of silence?

Mr. KEARNS. No.

Mr. FLOOD. You do not like the word "conspiracy"? Are you a lawyer?

Mr. KEARNS. No.

Mr. FLOOD. Do you know the legal definition of the word "conspiracy"?

Mr. KEARNS. I was not objecting to the word conspiracy.

Mr. FLOOD. There was a conspiracy, then?

Mr. KEARNS. No.

Mr. FLOOD. Did you discuss this before you came up here? Did not you and your staff at any time before you appeared before this com-

mittee—the last time in justification of this part of this budget for this purpose which was authorized—did you discuss at any time in any of your meetings dealing with this justification, the question which the chairman now posed for you?

Mr. KEARNS. I do not recall whether we did or not.

Mr. FLOOD. You do not?

Mr. KEARNS. No.

Mr. FLOOD. If you did, would you have remembered it, do you think?

Mr. KEARNS. That is a difficult question.

Mr. FLOOD. Let me ask you this: Did you think it was of sufficient moment and do you think it was of sufficient importance? Did it go sufficiently to the materiality of this whole program? Why did you not discuss it?

Mr. KEARNS. If I may just get one point in here that I think is important, upon the institution of this Trade Policy Committee, we started trying to function. It took us 4 or 5 months before we were able to really evaluate what was involved in administering the chairmanship of the Trade Policy Committee.

Mr. FLOOD. What 4 or 5 months? That is important.

Mr. KEARNS. I think it probably would have carried past the date——

Mr. FLOOD. What date?

Mr. KEARNS. Past the date where we appeared before you earlier this year.

Mr. FLOOD. When did you appear here?

Mr. KEARNS. I guess it was somewhere in March or April.

Mr. FLOOD. You mean to tell me that we were into March or April and this order was issued on November 25, and yet by March or April it had not jelled to any sufficient degree for you to indicate to us its existence?

Mr. KEARNS. I do not have the dates in my mind, but if I could just give you the general chronology, the Executive order was issued and we started acting upon it as rapidly as we could. As soon as we were able to evaluate what was involved in requirements upon the Department, then we prepared for departmental consideration first a supplemental budget that we felt would be necessary to meet the challenge of this assignment. That went from our Department to the Bureau of the Budget. What the exact dates of those were, I do not know at the moment.

Mr. FLOOD. I am sure that took place.

What I am inquiring about, pursuant to the chairman's original thought, is why and for what reasons was there not a scintilla of evidence suggested to this subcommittee that the condition existed?

Do you not think we would have been interested?

Mr. KEARNS. Yis, sir.

Mr. FLOOD. Why did you not tell us something about it?

You were aware, of course, that during all of this same period of time you were upset about the passage of the Reciprocal Trade Agreements Act as an authorization law during that time.

You were deeply involved in that?

Mr. KEARNS. Yes, sir.

Mr. FLOOD. But you took pains to advise us about that condition; did you not?

Mr. KEARNS. Yes.

Mr. FLOOD. But not this one?

Mr. KEARNS. For myself, from my own standpoint——

Mr. FLOOD. When I say "you," it is rhetorical. You can speak only from what you know.

Mr. KEARNS. Yes, but what I know, my reason for not mentioning it, is that I did not understand that was apropos. When the matter was being discussed either within the Agency or the Bureau of the Budget——

Mr. FLOOD. Apropos. Your French is not good.

I think that I understand what went on there. I have had this experience with the Department of Defense.

After the Russians fired sputnik in October-November, everybody from the Department of Defense came to our subcommittee, civilian and military, and asked to have their budget increased. They even changed the nomenclature of their bureau headings to include the word "missiles." Everything in the Department of Defense now has "procurement of aircraft and missiles, procurement of blankets and missiles."

The conjunctive "and missiles" now is a sure way to get Congress to give you a blank check for money. If you put "missiles" in it you get anything you want.

Now that the Reciprocal Trade Agreements Act has become law you held this out, this $3.5 million, from your original presentation. Now that it is authorized and now that it is passed, now you come back here and say, "Well, you passed the law and now you must give us the people because in addition to the Reciprocal Trade Agreements Act there is an Executive order which makes us the Poobah of the reciprocal trade agreements."

Commerce is now the minor deity and now you want to execute it?

Mr. KEARNS. I want to say two things. It is only $200,000 and it is not up in the astronomical figures.

Mr. FLOOD. You mean of the supplemental?

Mr. KEARNS. I am sorry that I did not put "missiles" in. I did not know it would have that effect.

Mr. FLOOD. Not with this subcommittee. This subcommittee does not deal with missiles.

Mr. PRESTON. Will you yield at this point, Mr. Flood? I have a question right in line with what you are following.

Mr. FLOOD. Yes.

Mr. PRESTON. Mr. Secretary, we do not mind being called upon for supplemental funds if you have a real good case to make.

Today, I think that you have made a rather faulty presentation and I further want to emphasize the fact that you have not justified this request by asking you this very significant question:

TRADE IMPACT STUDIES

How many trade studies did your agency make and furnish to Members of Congress concerning the impact of foreign trade on each congressional district?

Mr. KEARNS. We have completed studies on all 48 States and on 119 congressional districts.

Mr. PRESTON. How many people were involved in that study?

Mr. KEARNS. I do not know. I would guess, 10 or 12.

Mr. PRESTON. They did all that work?

Mr. KEARNS. Ten or twelve.

Mr. PRESTON. I think that you are wrong about that.

How many people were involved in the study that you furnished to Members of Congress which were designed to influence their votes on reciprocal trade? You can see that that was designed for that purpose?

Mr. KEARNS. I would not concede that.

Mr. PRESTON. You would not?

Mr. KEARNS. No; I would not.

Mr. PRESTON. Why was it presented to the Members of Congress just prior to the voting on reciprocal trade?

Mr. KEARNS. Here are the letters of request from Members of the House and Members of the Senate.

Mr. PRESTON. Please let me see the letters.

Mr. KEARNS. Those are in alphabetical order so that you can take them as they come.

What actually happened is that—

Mr. PRESTON. Just a minute.

Were these letters written by invitation? Did you invite Members to write to you any letters on this subject?

Mr. KEARNS. If people asked us for such information, we said, "If you would like to ask us with a letter, we will be glad to respond in some cases."

Mr. PRESTON. Did you call on Members of Congress and suggest, "If you write me a letter, I will furnish you a statement concerning the impact of foreign trade on your district"?

Mr. KEARNS. I do not believe that, in any case, we initiated it.

Mr. PRESTON. Are you certain about that?

Mr. KEARNS. Yes; I think so.

Mr. PRESTON. Are you positive?

Mr. KEARNS. As good as my memory, yes; I think so.

Mr. PRESTON. Here is a letter from Senator Anderson.

Did you or anybody in your office call on Senator Anderson prior to the writing of this letter and discuss the impact of foreign trade on his State?

Mr. KEARNS. Not to my knowledge; no, sir.

Mr. PRESTON. Does anybody in this Bureau want to comment on that?

Mr. MACY. It was not me.

Mr. PRESTON. Let us see what the letter says.

You may want to change your answer to that question when I read the letter.

DEAR MR. KEARNS: In preparation for the forthcoming legislative proposals relating to the reciprocal trade agreements, it is my understanding that upon request you will furnish individual Senators and Representatives an analysis of the impact of foreign trade upon their constituencies.

I would appreciate receiving such a report with respect to New Mexico——

How did he get this understanding?

Mr. KEARNS. That is very easy to understand. The way this program was started——

Mr. PRESTON. How did he get the understanding?

Mr. KEARNS. I imagine somebody told him.

Mr. PRESTON. Who?

Mr. KEARNS. It could have been one of his colleagues.

Mr. PRESTON. Nobody in the Bureau of Foreign Commerce?

Mr. MACY. Definitely not.

Mr. PRESTON. How did he get this understanding, do you suppose?

Mr. KEARNS. Most of this was passed by word of mouth from Member to Member, or some of them read it in the newspapers. There was quite a bit of newspaper notice of the activity.

Mr. PRESTON. Here is another letter from Senator Bible addressed to you.

DEAR MR. SECRETARY: It has come to my attention that your Department is ready to prepare—

and he puts this "ready to prepare" into quotations—

reports for Members of Congress showing the overall effect of exports and imports in the various areas of the country.

I would greatly appreciate it if you would make such a study of the State of Nevada and the overall effect of exports and imports on our economy—

How did it come to his attention, do you think?

Mr. KEARNS. I do not know, except that someone may have told him or he may have read it in a newspaper or a magazine or a bulletin.

Mr. PRESTON. Mr. Secretary, is it not a bit strange that you would have all of these letters? How many letters are there here?

Mr. KEARNS. About 150, I think.

Mr. PRESTON. One hundred and fifty letters from Members of Congress requesting you to make an analysis of the effect of foreign trade on their congressional districts.

You never had this in 1 calendar year before, did you?

Mr. KEARNS. No.

Mr. PRESTON. Have you ever had this many requests in 1 calendar year before?

Mr. KEARNS. I have never been in this business before.

Mr. PRESTON. You gentlemen who have been around for some time may wish to comment. I am not objecting to the fact that you made a study. I think it is very helpful information, but it illustrates one fact plainly to me—that you have plenty of people down there to make these studies.

Mr. MACY. These were not made in the Bureau of Foreign Commerce.

Mr. PRESTON. Where?

Mr. KEARNS. We had a special crew we recruited from all of the areas that had an interest in the subject.

Mr. FLOOD. That is interesting.

Mr. PRESTON. Did you get some of them from the President's office?

Mr. KEARNS. I would have to get a list of those for the record.

Mr. PRESTON. Mr. Secretary, you are the head of this whole shop. Tell us the whole story. Did you get some from the State Department?

Mr. KEARNS. I think we did.

Mr. PRESTON. Tell us now where you got them all and how many people were involved.

Mr. KEARNS. Several agencies were interested in the subject.

Mr. PRESTON. Which ones?

Mr. KEARNS. I would have to submit it for the record.

Mr. PRESTON. But you are the head of this shop and you know all about the strategy which goes on in the Department of Commcrce in your area, I am sure. You are not naive, I am certain of that.

Mr. KEARNS. I cannot answer the question as to where they came from.

Mr. PRESTON. Did you get some from the President's office?

Mr. KEARNS. I would have to look that up.

Mr. PRESTON. Did you get any from private sources?

Mr. KEARNS. No, sir.

Mr. PRESTON. Outside of Government?

Mr. KEARNS. No, sir.

Mr. PRESTON. You did not know where these people came from?

Mr. KEARNS. At the moment; no, sir.

Mr. PRESTON. Mr. Macy, you and Mr. Anderson have been around a long time and we have a high regard for you gentlemen, just as we do for the Assistant Secretary of Commerce, and we think you are very capable men.

Where did these people come from? I am sure that you know.

Mr. MACY. I believe that Mr. Nielson could perhaps answer. Frankly, I do not know where they all came from.

Mr. PRESTON. I am willing to hear that from Mr. Nielson or anybody. I want to know where they came from.

I would not have gone into this question this morning if you people had not come up with this request of $200,000.

Mr. MACY. I do know how many from the Bureau of Commerce.

Mr. PRESTON. How many?

Mr. MACY. Five.

Mr. PRESTON. Mr. Nielson, tell us where the rest came from.

Mr. NIELSON. I do not have the actual number with me, but I am sure that some came from the Department of State and probably Agriculture.

Mr. MACY. One from the Department of Agriculture, I believe.

Mr. NIELSON. I do not know the number, but I think some from the Department of Defense.

Mr. PRESTON. How many from the White House?

Mr. NIELSON. I do not recall.

Mr. PRESTON. Mr. Nielson, I want a very accurate answer to this question: How many from the White House, in your judgment?

Mr. NIELSON. Mr. Chairman, I do not recall any particular one from the White House but I would, subject to changing the record, like to check our records to see.

Mr. PRESTON. How many people, in your judgment, were used in this special project to influence the votes of the Members of Congress on the reciprocal trade bill?

How many were used altogether?

Mr. NIELSON. First, Mr. Chairman, I would like to say in reference to an answer to your question, I do not recall right now the total

number, but, again, I would be happy to make that a part of the record.

Mr. PRESTON. We would like it.

(The information referred to follows:)

NUMBER OF PEOPLE EMPLOYED ON TRADE IMPACT STUDIES

From the time that work on trade impact studies was started, a total of 38 personnel were assigned at one time or another to this work. Some of these personnel worked for a few days, others worked on a part-time basis, while some have worked full time on the project since its beginning in January 1958. Personnel were detailed or loaned for work on this project without reimbursement to the agency as follows: Commerce, 20; Labor, 8; State, 3; Agriculture, 3; Defense, 2; Treasury, 1; and Interior, 1.

Mr. PRESTON. Mr. Moore, I hate to get you involved in this question, but I am sure that you have some helpful knowledge about it.

How many, in your opinion, were used in the special project?

Mr. MOORE. I do not know how many, Mr. Chairman.

Mr. PRESTON. Who supervised it?

Mr. MOORE. They were supervised through one man that was taken over from the Office of International Trade Fairs on loan.

Am I correct, Mr. Kearns?

Mr. KEARNS. Yes, sir.

Mr. MOORE. At that time.

Mr. PRESTON. Who was he?

Mr. MOORE. A man by the name of Robinson.

Mr. KEARNS. No, Don Bostwick.

Mr. MOORE. Mr. Bostwick was not from International Trade Fairs. I thought it was Robinson.

Mr. KEARNS. Bostwick. We hired him as a special consultant to me.

Mr. MOORE. Then it came under his management.

Mr. PRESTON. You hired him as a special consultant?

Mr. KEARNS. Yes, sir.

Mr. PRESTON. Where was he working before you hired him?

Mr. KEARNS. I think he was an assistant to one of the Members of Congress.

Mr. PRESTON. Which Member?

Mr. KEARNS. I do not know, sir.

Mr. MOORE. I do not know.

Mr. PRESTON. Which Member of Congress employed him?

Mr. MOORE. I did not know he was employed by a Member of Congress.

Mr. KEARNS. I can find out.

Mr. PRESTON. Do you know, Mr. Macy?

Mr. MACY. No.

Mr. PRESTON. Is he still employed by the Bureau of Foreign Commerce?

Mr. KEARNS. Yes, sir.

(NOTE.—Subsequent check by the Department of Commerce disclosed that Mr. Bostwick was employed within the Office of the Secretary of Commerce.)

Mr. PRESTON. Is he a permanent employee?

Mr. KEARNS. He is starting the 1st of July and he will continue as a——

Mr. PRESTON. Up to this point he has been on a consultant basis?
Mr. KEARNS. That is right.
Mr. PRESTON. At what rate of pay?
Mr. KEARNS. $44 a day.
Mr. NIELSON. Roughly equivalent to a grade 14.
Mr. PRESTON. Who actually employed him?
Mr. MACY. I would like to correct something. He is not paid out of the Bureau of Foreign Commerce.
Mr. PRESTON. Who does pay it?
Mr. MACY. He is paid out of the Secretary's office.
Mr. PRESTON. Who employed him?
Mr. KEARNS. I did.
Mr. PRESTON. You interviewed him?
Mr. KEARNS. Yes, sir.
Mr. PRESTON. You do not remember who he worked for on the Hill?
Mr. KEARNS. I do not recall.
Mr. PRESTON. Mr. Secretary, that is amazing.
Mr. KEARNS. I really do not know. I would tell you if I knew.
Mr. PRESTON. Do you have an assistant here who might know the answer to that question?
Mr. KEARNS. No, but we could phone and find out. I do not think it is any secret.
Mr. PRESTON. What are his qualifications for the tremendous job that you assigned him? Do you have any recollection about his qualifications and background?
Mr. KEARNS. As to his background, he is a rather young fellow just out of college a short time.
Mr. PRESTON. That is commendable, he is young.
Mr. KEARNS. With a background of research. It was felt that from the experience that he had had, and in talking with him, he apparently had ability and he looked like he could conduct a research program.
Mr. PRESTON. Who first mentioned to you the idea that it would be good to have studies and analyses made in each congressional district? Who first suggested that to you?
Mr. KEARNS. We were requested by a Congressman from Michigan, Mr. Chamberlain, to prepare material that would indicate the impact of world trade upon his district. So, we tried to see what information was available. I spent a good deal of time on it myself as did other members of our staff and it became evident that there was information available but it was a correlating job of pulling together specific information and applying it to an area.
So, we started doing it and about that time we interviewed Mr. Bostwick and so he gathered up the information for this one study.
Mr. PRESTON. You say now that Mr. Chamberlain is the father of this whole idea?
Mr. KEARNS. He made the request for the first study.
Mr. PRESTON. For the first study, but why did you decide to do it for the whole United States?
Mr. KEARNS. We did not decide all at once. We were trying to find out if it could be done. As soon as Mr. Chamberlain had his material, we had several other requests and the requests grew.
Mr. PRESTON. Nobody in the Commerce Department or the executive branch of the Government first discussed with you the idea that you should make it for the entire Congress?

Mr. KEARNS. We did not make it for the entire Congress.
Mr. PRESTON. You made it for the 48 States?
Mr. KEARNS. That is one of the evolutionary processes.
Mr. PRESTON. Who first discussed that with you?
Mr. KEARNS. The Secretary.
Mr. PRESTON. The Secretary of Commerce?
Mr. KEARNS. With the Secretary; yes, sir.

It was an effort on our part to meet a request and a demand. In addition to requests from Congress we were constantly getting requests from all types of media; newspapers, magazines, and civic organizations were asking for the same type of information. To our knowledge we had never yet, or nobdy had ever attempted to provide this kind of information.

Mr. PRESTON. I shall now read a letter dated April 29, 1958, from Congressman Bray of Indiana.

DEAR MR. KEARNS: I would appreciate receiving a study of the impact of world trade on the Seventh Congressional District of Indiana, which I represent.

It is my understanding that such studies are supplied upon request by Members of Congress. I believe the information would be of use to me * * *.

There is a certain tone to all of these letters that there is an understanding that these studies are available.

How did that understanding get abroad?

Mr. KEARNS. I think that is very easily explained. Mr. Chamberlain would tell his colleague that if he requested it——

Mr. PRESTON. Are you stating that Mr. Chamberlain has such a vast influence in the Congress that he can wield this upon the Senate and the House and every Member of the Senate and the House will write a letter like this?

Mr. KEARNS. I did not say he did, but it would go from one to the other in large degree. I believe probably some of the publicity that came as a result of this——

Mr. FLOOD. I have pretty big ears and I never heard anything about it until this morning.

Mr. PRESTON. Neither did I.

Mr. FLOOD. I am from the anthracite coal fields and I do not believe anybody talked to me about it.

Mr. PRESTON. Until Mr. Kearns brought the study to my office, I had heard nothing about it. It was useful and I used it in some speeches that I have made since that time. I want to emphasize again that I am not criticizing the fact that the studies were made, because I think they provide helpful information, I mention it to illustrate that the Department of Commerce had ample time to put people on this colossal job specifically for the purpose of influencing the votes of Members of Congress on reciprocal trade. Now you come before us and say that you need additional people to do work that is related to this Executive order. It just does not add up, to me as an individual, when I know what you have done with these people previously.

Mr. KEARNS. Mr. Chairman, it is my considered judgment, and I think it is based upon fact, that the demands and requests for information such as this will not diminish by the time the trade legislation is resolved. If we are to continue to provide service we will have to

be able to do the same thing continually, not just during a legislative discussion, but continually.

Mr. PRESTON. Mr. Secretary, I see two letters here and I am going to read a letter from Congressman Budge of Idaho. He starts out by saying,

* * * it is my understanding—

and so forth.

The next letter is from Representative Broyhill and he says—

I understand it is customary for the Department of Commerce to prepare and publish data—

and so forth.

There is a tone in all of these letters that indicates that these letters were promoted. I am confident they were.

I am wondering why you did not ask me to write one?

Mr. KEARNS. I did not ask anyone. I think that if you will look through that, you will probably find as many people who were opposed to the legislation as were in favor of it.

They asked for this information. The reason the one was delivered to you, as I believe also to Mr. Bow, was because they were State studies, and in every case where a State study was prepared, we delivered a copy of it to every Member of the House of Representatives at the same time we delivered it to the Senate. That is the reason that in those cases, no request——

Mr. PRESTON. Mr. Secretary, you recall that you come to my office and first delivered to me a study on my own congressional district.

Mr. KEARNS. That is right; yes, sir.

Mr. PRESTON. At a later date, you delivered a copy that dealt with the entire State?

Mr. KEARNS. That is right.

Mr. PRESTON. After those copies were delivered, telephone calls were made from the Bureau of Foreign Commerce from your section, your agency, inquiring if those studies had been released to the press.

Why were these followup calls made, if these things were not designed to influence the Congress?

Mr. KEARNS. I think that if you will recall the conversation that I had when I delivered it, it was that I told you—at least, I delivered all of them myself or very nearly all of them—that this was in the nature of an advance draft and if there were any corrections that in your knowledge should be made, we would make them before this was made available for any requests.

We were getting requests for this type of information all the time, but it was our policy that we would not answer those requests until the Member of Congress had determined whether there was anything in the study to which he objected or which he thought was wrong. That is the reason I called you back.

Mr. PRESTON. You testified a moment ago that the person who requested you to make these studies and use this technique was the Secretary of Commerce, Mr. Weeks?

Mr. KEARNS. He discussed this——

Mr. PRESTON. Where was this discussion or conversation held, in the Secretary's office?

Mr. KEARNS. I presume it was on the basis that I recommended it and he agreed.

Mr. PRESTON. You presume. What was the basis? Did you go to see him or what?

Mr. KEARNS. I think I went to him and suggested it.

Mr. PRESTON. On what basis did you make the request of the Secretary, that it would be helpful in the reciprocal trade fight?

Mr. KEARNS. We were getting requests for information such as this and I thought it would be desirable, and in the nature of the service we were to render to be able to answer these requests.

Mr. PRESTON. Why did you take it up with the Secretary? That is a sort of abnormal function, is it not?

Mr. KEARNS. Not necessarily.

Mr. PRESTON. Why did you have to clear it with the Secretary?

Mr. KEARNS. I try to make it a practice to discuss such subjects with him to get his advice and suggestions. After all, I have only been in business a relatively short time.

Mr. PRESTON. Did you talk about how many people would be involved from the Bureau of Foreign Commerce?

Mr. KEARNS. Yes, sir.

Mr. PRESTON. Did you talk about how many people you would need from Agriculture and the State Department?

Mr. KEARNS. No.

Mr. PRESTON. Just answer the question.

Mr. KEARNS. I do not think we discussed how many we would need from the other agencies. At a certain point we did not know we would get assistance from the other agencies.

Mr. PRESTON. When did you find that out?

Mr. KEARNS. We had an interagency committee to discuss the progress of the trade legislation and during the course of the discussions, it became evident that we did not have within the Bureau of Foreign Commerce enough staff to answer the requests that we were getting for this type of information. Some of the agencies volunteered to assist us and that is the reason we got some people from the other agencies for short periods of time, some for a week or 2 weeks, to fill in.

Mr. PRESTON. Did they all move over to the Bureau of Foreign Commerce and operate out of your office space?

Mr. KEARNS. Yes.

Mr. PRESTON. Under the administration of your people?

Mr. KEARNS. Yes, sir.

Mr. PRESTON. Which one of your assistants supervised them?

Mr. KEARNS. Don Bostwick.

Mr. PRESTON. Who else? Did Mr. Macy or Mr. Anderson have anything to do with them?

Mr. KEARNS. I think not.

Mr. PRESTON. Mr. Bostwick, purely and simply, supervised this operation?

Mr. KEARNS. And I gave him some——

Mr. PRESTON. I understand he was formerly an assistant to Congressman Minshall, of Ohio. Is that it?

Mr. KEARNS. I think that is it.

Mr. PRESTON. Are you sure?

Mr. KEARNS. No, I am not sure.

Mr. PRESTON. Who first suggested to you that you employ Mr. Bostwick?

Mr. KEARNS. I think our Deputy General Counsel, Mr. Overton.

Mr. PRESTON. What has Mr. Boswick been doing since the vote on reciprocal trade?

Mr. KEARNS. We still have these requests come in. He is still making these studies.

Mr. PRESTON. Is this your complete file on the question?

Mr. KEARNS. That is on requests, and here is the file on comments after they have been received.

Mr. PRESTON. Let us see the date of the last request.

Mr. KEARNS. These are in alphabetical order, so I have not attempted to put them in any other order for other purposes.

Incidentally, in these studies, there is no reference whatever to the Reciprocal Trade Act. These are purely statistical studies of the flow of trade in a district. There is no reference to that at all.

Mr. PRESTON. Here is a nice letter from Congressman Cooley addressed to you:

DEAR MR. KEARNS: I enjoyed our brief visit yesterday and I hope when you get in our vicinity you will drop by my office. I appreciate your leaving the report of your foreign-trade study on foreign-trade effects in North Carolina. I know it will be useful to me and other members of my staff. It seems that you and your people have been devoting a great deal of your time to this impact study * * *.

If you could afford to use these people and your own time for this purpose, how is it now that you find it necessary to ask us for additional funds in connection with the President's directive?

Mr. KEARNS. Again, it is because there is every evidence that this kind of information is constantly needed and it is not just a matter of being needed during a time of discussion on a bill and the entire country needs this kind of information.

The tremendous flow of requests that we have had from the news disseminating agencies shows a great thirst for this knowledge and kind of information. We think it is a service that we can perform. In addition to that, as I mentioned before, we have now been able to evaluate just what is involved in the matter of the Trade Policy Committee. This is outside of that. This is a matter of policy determination. We know what that requires and it requires more staff than we have. The change in the economic conditions of the world, particularly as exemplified by European common markets, pose to us a demand for some services that it will be in the interests of this country to provide.

Then we have the growing activities of the Soviet bloc in the economic field and feel that, if we are going to meet this challenge, we need additional strength to do it.

Mr. PRESTON. Previously you testified that your best information was that maybe 10 of your people were employed in this study.

Mr. KEARNS. I think there were 10.

Mr. PRESTON. Somebody else suggested five. Which one is the correct figure?

Mr. MACY. The correct figure, as far as the Bureau of Foreign Commerce is concerned, out of our budget, is five people.

Mr. PRESTON. Where did the other five come from?

Mr. KEARNS. Other agencies that contributed on a periodic basis for 2 weeks, or whatever it may have been. Maybe it was a secretary or an analyst. I think we had a total of 10 or so, maybe 12, people working on it more or less constantly. Maybe not the same people, but they were working on it.

Mr. PRESTON. Any further questions?

TRADE POLICY COMMITTEE

Mr. FLOOD. You held a meeting of this Trade Policy Committee?

Mr. KEARNS. Yes, sir.

Mr. FLOOD. When was the first one held?

Mr. KEARNS. The first case we had was the——

Mr. FLOOD. When was the first meeting held? Name who the people on the Committee were.

Mr. KEARNS. I think the first meeting was held in December.

Mr. FLOOD. When was it held?

Mr. KEARNS. I would have to look it up.

Mr. MACY. December; but I do not know the exact date.

Mr. FLOOD. Then, actually, you held a meeting of the Trade Policy Committee. It organized itself. It appointed a secretary. Its Chairman was designated and sat around a table and it functioned, in December?

Mr. KEARNS. That is right.

Mr. FLOOD. That was at the same time you were considering the main Commerce budget and it had been submitted to the Bureau of the Budget by December, before Christmas. At the same time you had sent your main budget, which you justified here, to the Bureau of the Budget, and in consultation with the White House and other agencies on commerce, you had already held a meeting of this Trade Policy Committee; right?

Mr. KEARNS. Yes, sir.

Mr. FLOOD. I presume, if it is a fact, please tell me, that subsequent meetings were held during January, February, March, and April?

Mr. KEARNS. Yes, sir.

Mr. FLOOD. Yet, you persist in indicating to me today that you saw no point in even mentioning the accouchment of this Committee up until this morning; is that it?

Mr. KEARNS. We had to wrestle with some of the problems involved, and what the demands were.

Mr. FLOOD. You did not mention that it had been organized and was functioning and was meeting and the order had been issued for several months? You did not do that, did you?

Mr. KEARNS. I do not suppose I did.

Mr. FLOOD. You did not, as a mattter of fact.

Mr. KEARNS. I do not have the record before me. I do not think I did.

Mr. FLOOD. You do not think that you did?

Mr. KEARNS. No.

Mr. FLOOD. I consider that evasive.

Mr. KEARNS. I do not know.

Mr. FLOOD. Let me understand this: Do you make it clear now that an important element of our foreign policy is economic penetration?

Mr. KEARNS. I surely do.

Mr. FLOOD. And that the Chairman of the Board to determine foreign-trade policy and the execution of such policy—and I consider it to be of extreme importance, I am advised—is no longer vested with the Department of State but now is with the Department of Commerce and this extremely delicate, geopolitical execution of foreign policy, the counterirritants and counteraction and action against Soviet penetration worldwide, the common European market and all of the bilateral and multilateral agreements and arrangements in which the United States is directly concerned, or in which it is indirectly concerned because of its trade with all of these other powers, is endowed by Executive order of the President to be handled by the Department of Commerce and not by the Department of State.

Mr. KEARNS. That is hardly correct, if I may say so.

Mr. FLOOD. What is correct?

Mr. KEARNS. The responsibility rests with the President, as you know.

In the past, the advice to the President has been upon an informal basis and the principal adviser to the President on foreign-trade policy was the State Department. It was determined that it would be in the interests of the Nation's economy to formalize the advisory capacity, but responsibility still lies with the President and the final determination is made by the President.

Mr. FLOOD. I am sure of that. That is a constitutional provision.

Mr. KEARNS. The Secretary of Commerce is merely the Chairman of this Advisory Committee and all of the other departments that have an interest are a part of that Advisory Committee. The Department of Commerce does not take over all of this responsibility.

Mr. FLOOD. I can understand that, but do you see any significance attached to the fact that the Chairman of the Commission or the Committee is to be the Secretary of Commerce rather than the Secretary of State?

Mr. KEARNS. Yes, sir.

Mr. FLOOD. What is the significance that you see?

Mr. KEARNS. That the Commerce Department is charged in its statute that it is to have the responsibility for foreign and domestic commerce of the United States.

I believe this is a recognition of that responsibility.

Mr. FLOOD. In direct ratio to the increase in importance and significance of foreign trade in international politics and geopolitics, so does the increased importance of the Department of Commerce and the Secretary of Commerce in the administration and policymaking and execution of foreign policy of this Nation depreciate other elements?

Mr. KEARNS. It does not depreciate the other elements.

Mr. FLOOD. The fact is that it does in direct ratio increase it?

Mr. KEARNS. The increase is the responsibility of the Department.

Mr. FLOOD. Since it increases, to that extent, the importance and prominence of the Secretary of Commerce, it must therefore reduce equally the significance and the importance, and the position, of the Secretary of State in exactly the same field?

It would have to Q. E. D.

Mr. KEARNS. Not necessarily.

Mr. FLOOD. Would you indicate how they can both do the same thing?

Mr. KEARNS. I believe with the normal machinery set up that the President will be able to get better information and better advice than he has had before because of the formality of it. I do not think it depreciates any of the advice that he has had before.

Mr. FLOOD. I am not talking about whose advice it depreciates. I am trying to find out under this new operation and by the existence of this new Policy Committee, to what extent you are now taking over the functions—the Constitution of the United States to the contrary, notwithstanding—of theDepartment of State.

Mr. KEARNS. I think none, because we still are advisory to the President and the President has the authority.

Mr. FLOOD. I am not talking about your chain of command.

Do I understand this: Instead of channeling all of this policy, instead of channeling all of this opinion, instead of channeling all of this minutiae of detail and everything else through the Secretary of State and the Department of State on foreign policy to the President, you have a direct line of communication to him now; is that it?

Mr. KEARNS. It actually was not channeled through the Secretary of State either. It was through the various Departments who submitted the recommendations informally to the President's Office. That is the way the policy was determined. As it is now. it is formalized wherein the various agencies discuss the policy with the Secretary of Commerce, as Chairman, and then it goes to the President as advice.

Mr. FLOOD. With reference to your policy in this matter, let me ask you this: I want you to examine this and have your Trade Policy Committee function on it.

Do you know that with reference to anthracite coal, France has 600,000 tons of Russian coal by barter and that she is excluding American anthracite, even though it is desired by the French, requested by the French market, and preferred by the French market, and that it is competitive in price and far superior in quality, and that only 15,000 tons was permitted into France under the reciprocal trade agreements? Yet, she is bartering with hardware with the Russians—600,000 tons.

Do you know that the Germans have now declared that they are not going to make any more contracts for the purchase of American coal, that they have too much of their own?

If those things are so, as facts, I want you to let me know whether you are going to determine to refuse to invoke the reciprocal trade agreements in those specific instances, with the Germans and the French, on this particular American product, or are you going to use the reciprocal trade agreements in this specific case on this specific product with these particular countries for international political purposes as against the industry?

Which one? Will you let me know?

Mr. KEARNS. Obviously, I cannot speak for the committee.

Mr. FLOOD. Of course you cannot, but you are going to let me know?

Mr. KEARNS. I can say that your question poses just exactly the thing that we are trying to tell you.

Mr. FLOOD. You do not mean to tell me that you are asking Mr. Preston for all of these employees when you do not know this very common fact exists as a fact?

Mr. KEARNS. We are asking for them so that we can answer requests, just as you made them to me right now.

Mr. FLOOD. This is a rhetorical question. As a matter of fact, I have answered it for you?

Mr. KEARNS. That is the type of question that we are getting constantly.

What are you going to do about these things?

Mr. FLOOD. No, this is not a new question. This is an old one. I am speaking about last year.

Mr. KEARNS. That is the kind of thing that we have to——

Mr. FLOOD. All right, but whether you get the employees or not, I also want you to find out for me under what circumstances was Venezuela permitted to dump residual fuel oil on the east coast of the United States within the last several years, overnight. Particularly with reference to the fact that the Dictator Jeminez was then the dictator of Venezuela. You are in policymaking now, you told me this, and I want a memorandum on the considerations of policy with reference to that fact, with the change in the political complexion in Venezuela and the fact that you are concerned about here as the Chairman of the Commission.

Mr. KEARNS. I am only the Assistant Secretary.

Mr. FLOOD. You, through him. You function there. That being the case, I want to know what is the purpose for continuing something which started only several years ago, or a few years, and which never existed before that—a deliberate permission for the dumping of residual fuel oils which had no economic value in Venezuela, but dumped here at dumping prices in direct competition with American basic fuels. Why is it in the best interests of reciprocal trade insofar as America is concerned? You told me that you are concerned with the business of this country—that is your quotation—and I would like to know if that is continued as of today. I would like to know, finally, what part did your Commission or your office play in the 48-hour copper deal with the Department of Defense during the course of the voting on the reciprocal trade agreements?

I am interested in that because I sit on the Defense Subcommittee and I want to know, even though we have been holding hearings for 7 months, what brought to a head on the eve of the rollcall vote on the reciprocal trade bill a $90 million purchase in copper through your office to the Department of Defense.

Do you know about that?

Mr. KEARNS. I know about that.

Mr. FLOOD. Maybe you can tell us something now.

Mr. KEARNS. Perhaps I could clarify that a bit, if the chairman would allow me to extend the record to include the Executive order which shows the limitations and the responsibilities of the Trade Policy Committee.

Mr. PRESTON. You can insert the order in the record.

(The material referred to follows:)

EXECUTIVE ORDER NO. 10741

ESTABLISHING THE TRADE POLICY COMMITTEE

By virtue of the authority vested in me by the Constitution and statutes, including the Trade Agreements Act approved June 12, 1934, as amended (48 Stat. 943; 57 Stat. 125; 59 Stat. 410; 63 Stat. 698; 65 Stat. 72; 69 Stat. 162; 19 U. S. C. 1351–1354), it is ordered as follows:

SECTION 1. There is hereby established the Trade Policy Committee, consisting of the Secretary of State, the Secretary of the Treasury, the Secretary of Defense, the Secretary of the Interior, the Secretary of Agriculture, the Secretary of Commerce, and the Secretary of Labor, or of alternates designated by them. Such alternates shall be officials who are required to be appointed by the President with the advice and consent of the Senate. The Secretary of Commerce or his alternate shall be the Chairman of the Committee. The Committee may invite the participation in its activities of other Government agencies when matters of interest thereto are under consideration; provided that such participation shall be limited to the heads of such agencies, or their alternates who are required to be appointed to office as above described.

SECTION 2. The Trade Policy Committee shall make recommendations to the President on basic policy issues arising in the administration of the trade-agreements program, which, as approved by the President, shall guide the Interdepartmental Committee on Trade Agreements established by paragraph 1 of Executive Order No. 10082 of October 5, 1949 (hereinafter referred to as the Trade Agreements Committee), in carrying out its functions.

SECTION 3. Each recommendation made by the Trade Agreements Committee to the President, together with the dissent of any agency, shall be transmitted to the President through the Trade Policy Committee, which shall submit to the President such advice with respect to such recommendation as it may deem appropriate. The said Executive Order No. 10082 is hereby amended accordingly.

SECTION 4. The Trade Policy Committee shall make recommendations to the President as to what action, if any, he should take on reports submitted to him by the United States Tariff Commission pursuant to section 7 of the Trade Agreements Extension Act of 1951, as amended (65 Stat. 74; 67 Stat. 472; 69 Stat. 166), and pursuant to Executive Order No. 10401 of October 14, 1952.

SECTION 5. Agencies of the Government shall furnish the Trade Policy Committee available information upon request of the Committee therefor for use in connection with the carrying out of the functions conferred upon the Committee by this order.

DWIGHT D. EISENHOWER.

THE WHITE HOUSE, *November 25, 1957.*

Mr. KEARNS. There are many of the things you have suggested, Mr. Flood, that were not within the purview of the Committee. I believe an analysis will clarify it.

Mr. FLOOD. Will you detail for me the things I asked about which are not within the purview of the Trade Policy Committee?

Mr. KEARNS. Yes, sir.

Mr. FLOOD. Will you indicate one now?

Mr. KEARNS. I will have to prepare an answer. You asked some very complex questions, and I would not attempt to answer them off the cuff.

Mr. FLOOD. What made you think there is a problem?

Mr. KEARNS. There are problems in many of these things.

Mr. FLOOD. What made you think anything I asked you—you have been around awhile; you are the man who detailed for us the philosophy of this policy—what thing did I ask you in the last 5 minutes which would cause you concern in that it would not be embraced by the jurisdiction of this new Committee? What one item?

Mr. KEARNS. The copper purchasing was purely an internal matter.
Mr. FLOOD. Internal?
Mr. KEARNS. Yes, sir.
Mr. FLOOD. Did you ever hear of Chile?
Mr. KEARNS. Yes, sir.
Mr. FLOOD. You are not concerned about Chilean copper?
Mr. KEARNS. Yes, sir; but the order was issued to stockpile copper as a purely domestic matter.
Mr. FLOOD. If you are the chairman of the Trade Policy Committee of the United States, how could you possibly spell the word "copper" in your sleep without a vis-a-vis with Chile? I dare you. One pound. Could you? Can you?
Mr. KEARNS. I was discussing the decision made on the stockpiling. This was a domestic matter.
Mr. FLOOD. The stockpiling of $90 million worth of copper is internal? Ninety million dollars worth of copper is internal and has no effect, directly or indirectly, with our relations with the Government of Chile? None?
Mr. KEARNS. I do not deny it has effect.
Mr. FLOOD. It is not entirely internal then? Could not be decided or determined without ignoring the ramifications vis-a-vis Chile and the copper market? It could not be, could it, $90 million worth?
Mr. KEARNS. It did not come before the Trade Policy Committee.
Mr. FLOOD. I am sure of that. I want to know why. You are going to let me know why; are you not?
Mr. KEARNS. I have given the best answer: that the decision was made on a domestic basis.
Mr. FLOOD. By whom?
Mr. KEARNS. I presume by the President?
Mr. FLOOD. Do you not know?
Mr. KEARNS. Not of my own knowledge.
Mr. FLOOD. Well, all right. Find out for me who made the decision, what were the sources of advice. This business of you fellows downtown trying to make the President of the United States the whipping boy for all these outrageous performances I do not like. I do not like that. There seems to be a conspiracy going on to destroy this man by making him responsible for all of your boo-boos and under-the-table operations. "He made the decision." "He is responsible." "He is the man." You and I know that is not so, as a fact. Constitutionally, yes, he is at the end of the line but I think it is an outrageous manner in which all Government agencies at all levels "pass the buck to the boss" when they are in a jam. It is a shame and I certainly do not admire them for it.

I would like to know who advised the President of the United States to do this and when it was decided. I also want to know why you were not consulted as the administrative officer for the Trade Policy Committee now charged since November 25 by an Executive order for the responsibility of advising him on foreign trade policy. This is a very interesting development. What is De Gaulle's attitude—you are a big man in this Trade Policy Committee—what is De Gaulle's attitude this morning on the Common Market that you are going to investigate and do such a big job on?
Mr. KEARNS. I do not know.

Mr. FLOOD. Do you not think it is very important?
Mr. KEARNS. Yes.
Mr. FLOOD. France is very important?
Mr. KEARNS. Yes, sir.
Mr. FLOOD. Have you examined it?
Mr. KEARNS. I have paid some attention to it but I do not know what his attitude is this morning.
Mr. FLOOD. I do not think you talked to him since coffee; no. Is that one of your problems?
Mr. KEARNS. I presume it would be one of our problems to maintain adequate knowledge.
Mr. FLOOD. Do you not known anything——
Mr. KEARNS. Not much.
Mr. FLOOD. Is this not for your Committee?
Mr. KEARNS. That is why I suggested that if we have the total Executive order that outlines——
Mr. FLOOD. What is your opinion? You have had it for 7 months. We have not seen it yet. You got it in November. What is your opinion? Are you charged with answering the questions I just asked you?
Mr. KEARNS. No; we would not be charged with knowing, in answering questions of every nature about world affairs.
Mr. FLOOD. But would you not be charged with knowing for obvious reasons what is the attitude of the present government in France to this problem? I want to know because anthracite coal has been excluded by this Government. Did you not even talk about it?
Mr. KEARNS. We do not talk about generalities. We have specific things that we discuss and they are all outlined.
Mr. FLOOD. Generalities? The foreign trade policy of the Government of France is a "generality?" This is rather a nebulous business you are talking about this morning; is it not? Well, no sense in pursuing this further, Mr. Chairman.
Mr. PRESTON. Thank you, Mr. Flood.
Mr. Bow?
Mr. Bow. I have a few questions.

RELATION OF TARIFF COMMISSION TO TRADE POLICY COMMITTEE

Mr. Secretary, I notice in your statement that the staff will analyze the Tariff Commission reports and other materials pertaining to escape-clause actions and review the recommendations of any agency on basic problems of world-trade policy. To what extent does the Tariff Commission enter into the work of the new seven-member Cabinet Committee?
Mr. KEARNS. In two ways. One is in escape-clause actions. When the Tariff Commission has concluded an escape-clause action and sends its recommendation to the President it is referred to the Trade Policy Committee for its advice to the President. So we would examine it very thoroughly and conclude with the advice.
The other function would be that dealing with the peril-point findings in which the Trade Policy Committee would advise the President on the list to be submitted to the Tariff Commission for examination and after the Tariff Commission has made its findings, to advise the

President upon what action he should take regarding the peril point.

Mr. Bow. In other words, the recommendation to the President comes from this seven-member Committee rather than from the Tariff Commission.

Mr. KEARNS. No. We advise him on what action the Trade Policy Committee would recommend him to take upon the Tariff Commission action.

Mr. Bow. In other words, the Tariff Commission report goes to the seven-man committee.

Mr. KEARNS. Just for review. It goes to the President in effect, but it goes to the seven-man committee for review and for advice to the President.

Mr. Bow. Your committee, the seven-man committee, then makes a report to the President after analyzing the Tariff Commission recommendations.

Mr. KEARNS. That is right, sir.

Mr. Bow. In the past, is it not a fact that the Tariff Commission has been a member of the committees that have sat in on these matters?

Mr. KEARNS. In the past the way it has been handled is whenever there was a Tariff Commission finding——

Mr. Bow. I mean on making tariffs and agreements. Have they not sat in on those?

Mr. KEARNS. This would have no interference with the Trade Agreements Committee discussions of agreements.

Mr. Bow. Does the Tariff Commission sit in with the Commission on setting up tariffs and agreements?

Mr. KEARNS. Just as they did in the past. There is no change in that. This is simply advisory to the President.

Mr. Bow. It is in the administration of the reciprocal trade program as authorized by law. It was my understanding in the past that the chairman of the Tariff Commission sat in these meetings in makng up the trade agreements. Is that still the policy?

Mr. KEARNS. Yes, sir, that is still the policy.

Mr. Bow. Is it still the policy that he has no vote?

Mr. KEARNS. That I do not know. Do you know. Bob?

Mr. SIMPSON. The Tariff Commission prefers not to vote.

Mr. Bow. I did not ask what he preferred. Does he have a vote?

Mr. SIMPSON. They are authorized to vote if they wish to record a position.

Mr. Bow. We are talking now about trade policy, not foreign policy, are we not?

Mr. KEARNS. That is right.

Mr. Bow. Your justifications refer to trade policy and not foreign policy.

Mr. KEARNS. It should be foreign trade policy.

FUNCTIONS OF THE FOREIGN TRADE POLICY COMMITTEE

Mr. Bow. It says trade policy, reading from your justifications. It says:

> In carrying out these functions, the committee will be concerned with the following types of activities:
>
> (1) Recommendations with respect to tariff negotiations, including compensation cases.

(2) Review and recommendations in escape-clause cases.
(3) Recommendations in certain other tariff matters such as the use of the Geneva wool reservation.
(4) Recommendations on United States positions with respect to any voluntary export arrangements of foreign countries; and
(5) Recommendations on other policy issues arising in the administration of the trade-agreements program, including all policy positions papers for the GATT.

Is that the function of this committee?

Mr. KEARNS. Yes, sir.

Mr. BOW. In other words, actually what this committee is doing is regulating the commerce with foreign nations, is it not?

Mr. KEARNS. Technically it advises the President on what he should do.

Mr. BOW. That is really what it is doing, is it not?

Mr. KEARNS. Yes, sir.

Mr. BOW. Now my friend from Pennsylvania has mentioned the Constitution several times. Here we have an admission that what they are doing is regulating commerce with foreign nations.

Mr. FLOOD. By treaty.

Mr. BOW. I should like to refer to article 1, section 8, of the Constitution of the United States, which says that the Congress shall regulate commerce with foreign nations. Where does the Congress come into this action?

Mr. KEARNS. The limitations they place upon the President in his authority in their delegation for specific periods and with specific limitations.

Mr. BOW. Does the Congress in any way set the duties or imposts?

Mr. KEARNS. Specifically, no.

Mr. BOW. Any tariffs set by the Congress?

Mr. KEARNS. They can be. Congress has the authority to do it.

Mr. BOW. Congress has the constitutional duty to do it but are we doing it?

Mr. KEARNS. Not as a practical matter.

Mr. BOW. But are we doing it at all?

Mr. KEARNS. I think the influence of Congress is felt in all the determinations.

Mr. BOW. I am wondering whether the influence of the Congress is felt or whether the influence of the executive department is felt in forcing us to delegate our constitutional authority and duties to the executive branch of the Government. That is an observation, Mr. Kearns. I will not ask you to comment on that.

COST OF TRADE IMPACT STUDIES

Going to these surveys that were made in various congressional districts in the States, many of the questions I wanted to ask were asked by the chairman on that, but I think you should furnish for the record a detailed statement of costs in the making of these surveys and I mean a real one. Do not hedge on it. Give us the actual costs.

(The information referred to follows:)

COST OF TRADE IMPACT STUDIES

The personal services cost for the trade impact studies was absorbed within available funds by the participating agencies. Personnel were detailed or loaned without reimbursement for varying periods of time ranging from 2 days

to the duration of the work. The cost of salaries paid to these personnel while on detail or loan is calculated at $47,905. The cost of printing of the trade impact studies and related materials is recorded as $10,937. Both of these cost items were computed as at June 26, 1958.

CIRCULATION OF TRADE IMPACT STUDIES

Mr. Bow. I should also like to know whether those were furnished to anyone other than Members of Congress.

Mr. KEARNS. Yes, sir, upon request.

Mr. Bow. Who were they sent to?

Mr. KEARNS. I would have to get the list. It would be a great many newspapers, civic organizations, I am sure several thousand of them were requested.

Mr. Bow. Did you have authority from the Bureau of the Budget to prepare them and send them out that way?

Mr. KEARNS. I would have to check with somebody that knows more than I do about this.

Mr. Bow. Do you know, Mr. Nielson, whether the Bureau of the Budget has given their consent to their being circulated by the Department of Commerce?

Mr. NIELSON. I do not recall with respect to the circulation. This was discussed with the Bureau of the Budget. I do not recall the question about the circulation, whether that was approved by the Bureau.

How many of these surveys were furnished to Charles Taft and his organization?

Mr. KEARNS. I would not know. I can find out.

Mr. Bow. Do you know whether any were furnished to them or not?

Mr. KEARNS. I think so.

Mr. Bow. I would like to know how many and what districts.

Mr. KEARNS. Would you like to have a complete list?

Mr. Bow. I would like to have a complete list of what was furnished to Charles Taft and his organization.

Mr. KEARNS. Would you like to have any others?

Mr. Bow. If it runs into the thousands, I would not want to do that. You have other important duties. You might be asking us for more men to get out that kind of report.

Mr. KEARNS. We have kept records, of course.

Mr. Bow. I would like to know how many were sent to the Charles Taft organization. Was that sent at his request?

Mr. PRESTON. If you will yield, Mr. Bow, I think we should insert in the record the complete list.

Mr. Bow. Very well.

(The list follows:)

LIST OF TRADE IMPACT STUDIES FURNISHED TO THE CHARLES TAFT ORGANIZATION

Charles P. Taft is the general counsel to the Committee for a National Trade Policy, Inc. This committee was supplied with a copy of each foreign trade impact study. A list of these studies is included hereinafter.

FOREIGN TRADE IMPACT STUDIES AVAILABLE BY DISTRIBUTION UPON REQUEST

Alabama State.
Alabama Ninth Congressional District.
Arizona State.
Arizona First Congressional District.
Arkansas First Congressional District.
California State.
California Third Congressional District.
California Ninth Congressional District.
California 10th Congressional District.
California 12th Congressional District.
California 13th Congressional District.
California, Alameda County.
California, Los Angeles County.
Colorado First Congressional District.
Connecticut First Congressional District.
Connecticut Second Congressional District.
Connecticut Fourth Congressional District.
Delaware State.
Florida State.
Florida Third Congressional District.
Florida Fifth Congressional District.
Florida Seventh Congressional District.
Georgia State.
Georgia First Congressional District.
Idaho First Congressional District.
Indiana State.
Indiana Sixth Congressional District.
Indiana Eighth Congressional District.
Illinois State.
Illinois 18th Congressional District.
Iowa State.
Iowa Second Congressional District.
Iowa Fifth Congressional District.
Iowa Sixth Congressional District.
Iowa Eighth Congressional District.
Kansas State.
Kansas Fifth Congressional District.
Kentucky First Congressional District.
Kentucky Third Congressional District.
Maine Second Congressional District.
Massachusetts State.
Michigan State.
Michigan Second Congressional District.
Michigan Sixth Congressional District.
Michigan Seventh Congressional District.
Michigan Ninth Congressional District.
Michigan 18th Congressional District.
Minnesota State.
Minnesota Fourth Congressional District.
Mississippi State.
Missouri State.
Missouri, Jackson County.
Nebraska State.
Nebraska First Congressional District.
Nebraska Second Congressional District.
Nebraska Third Congressional District.
Nebraska Fourth Congressional District.
New Hampshire First Congressional District.
New Hampshire Second Congressional District.
New Jersey State.
New Jersey Sixth Congressional District.
New York, upstate.
New York City, N. Y.
New York, Buffalo.
New York, Long Island area.

New York 37th Congressional District.
North Carolina State.
North Carolina Second Congressional District.
North Carolina Fifth Congressional District.
North Dakota State.
Ohio State.
Ohio Third Congressional District.
Ohio Ninth Congressional District.
Ohio 12th Congressional District.
Ohio 17th Congressional District.
Ohio, Cuyahoga County.
Oklahoma First Congressional District.
Oklahoma Fifth Congressional District.
Oregon State.
Oregon Second Congressional District.
Oregon Fourth Congressional District.
Pennsylvania State.
Pennsylvania, Allegheny County.
Rhode Island State.
South Carolina State.
Tennessee State.
Tennessee Third Congressional District.
Texas State.
Vermont State.
Virginia State.
Virginia Seventh Congressional District.
Washington State.
Washington Third Congressional District.
Washington Fifth Congressional District.
Wisconsin Second Congressional District.
Wisconsin Eighth Congressional District.
Wisconsis Ninth Congressional District.
Wisconsin State.

ORGANIZATIONS AND INDIVIDUALS SUPPLIED WITH SPECIFIC AREA IMPACT STUDIES UPON THEIR WRITTEN REQUEST

1. Mrs. Paul Bowden, League of Women Votes, Yakima, Wash.
2. Miss Marie A. Cowing, New York, N. Y.
3. Robert B. Moody, Berkeley, Calif.
4. Dr. Howard S. Piquet, Library of Congress, Washington, D. C.
5. C. G. Hall, Jr., Falls Church, Va.
6. Linwood B. Law, Buffalo Chamber of Commerce, Buffalo, N. Y.
7. Selig Altschul, American Aviation, New York, N. Y.
8. Miss Natalie C. Bedell, Creole Petroleum Corp., New York, N. Y.
9. James Reston, the New York Times, Washington, D. C.
10. Miss Dorothea M. Rice, American Metal Climax, Inc., New York, N. Y.
11. Miss Carlotta Kerwin, World Affairs Center for the United States, New York, N. Y.
12. Library, Bankers Trust Co., New York, N. Y.
13. Miss Jo Ann Aufdenkamp, Federal Reserve Bank of Chicago, Chicago, Ill.
14. Stephen Levitsky, United Steelworkers of American, Washington, D. C.
15. Mrs. Margaret H. Fuller, American Iron & Steel Institure, New York, N. Y.
16. Mrs. Norman M. Hinerfield, League of Women Voters, Los Angeles, Calif.
17. Walter J. Gross, North Plainfield, N. J.
18. Mrs. Ruth Warren Greenberg, Connecticut State Labor Council, AFL–CIO, Hamden, Conn.
19. Mrs. Ralph R. Mendelson, League of Women Voters of Ohio, Cincinnati, Ohio.
20. Samuel Jacobs, United Auto Workers of America, Washington, D. C.
21. Mrs. Edith R. Fairgrieve, Groton, Conn.
22. Mrs. Robert McElrow, League of Women Voters, Collingswood, N. J.
23. Mrs. Dorothy R. Wilson, University of Kansas City, Kansas City, Mo.
24. Miss Lucille Dillon, Young Women's Christian Association of the United States of America, New York, N. Y.
25. William E. Mills, Jr., Stamford, Conn.
26. Mrs. P. M. Leighton, League of Women Voters of Bridgeport, Trumbull, Conn.

27. Miss Ruth Savord, Council on Foreign Relations, Inc., New York, N. Y.
28. Miss Eileen M. Fox, Federal Reserve Bank, Philadelphia, Pa.
29. James R. Alliston, Board of Commissioners, New Orleans, La.
30. H. E. Michl, University of Delaware, Newark, Del.
31. Oliver C. Cox, Lincoln University, Jefferson City, Mo.
32. Dean Larrick, Webster Groves, Mo.
33. Robert G. Carter, University of Michigan, Ann Arbor, Mich.
34. Reference Library, Federal Reserve Bank of New York, New York, N. Y.
35. M. H. Sterne, Sterne, Agee & Leach, Birmingham, Ala.
36. Ildoraldo Orefice, Milan (315), Italy.
37. Charles E. Staley, the University of Kansas, Lawrence, Kans.
38. Miss Mary K. Garner, Encyclopaedia Britannica, New York, N. Y.
39. Curtis J. Hoxter, New York, N. Y.
40. Miss Elizabeth Guhring, American Seafood Distributors Association, Washington, D. C.
41. Benjamin M. Altschuler, Counselor at Law, New York, N. Y.
42. B. A. Rittersporn, Jr., the European Community for Coal and Steel, Washington, D. C.
43. Allen Dines, House of Representatives, Denver, Colo.
44. Kenneth Gorman, Baureline, Inc., New Orleans, La.
45. Warren R. Dwyer, Committee on Foreign Trade Education, Inc., New York, N. Y.
46. Lowell Maguire, Sunnyvale, Calif.
47. Walter H. C. Laves, Indiana University, Bloomington, Ind.
48. Fred G. Simonton, North Daktoa Farmers Union, Jamestown, N. Dak.
49. Prof. Gerand R. Richter, the American Institute for Foreign Trade, Phoenix, Ariz.
50. Kenneth Gormin, Bauerlein Advertising, Inc., New Orleans, La.
51. Charles H. Sevin, Alderson & Sessions, Philadelphia, Pa.
52. Stephen S. Ridgely, Sr., the Santa Clara County chapter of the Western Mining Council, Inc., San Jose, Calif.
53. Perry T. Hitchens, National Foreign Trade Council, Inc., New York, N. Y.
54. Joe R. Seacrest, Lincoln Evening Journal, Lincoln, Nebr.
55. Archie D. Gray, Gulf Oil Corp., Pittsburgh, Pa.
56. Mrs. Gladys S. Felton, University of Arkansas, Fayetteville, Ark.
57. Mr. Frank S. Roche, Electricians' Building, Miami, Fla.
58. Mr. Bill Baggs, Miami News, Miami, Fla.
59. Mr. William Hard, the Reader's Digest, New Canaan, Conn.
60. Mr. James R. Woody, Federal Reserve Bank of Richmond, Richmond, Va.
61. Mrs. Hazel H. Fort, International House, New Orleans, La.
62. Mr. John T. Galvin, the World Trade Center in New England, Inc., Boston, Mass.
63. Mr. Frank C. Scheers, First Wisconsin National Bank, Milwaukee, Wis.
64. Mr. Carroll P. Adams, Bennington County Industrial Corp., Bennington, Vt.
65. Mr. Frank E. Hickey, Port of Boston Commission, Washington, D. C.
66. Mr. Arthur M. Stephens, Evansville Chamber of Commerce, Evansville, Ind.
67. Mr. Richard L. Gorrell, the American Cotton Manufacturers Institute, Inc., Charlotte, N. C.
68. Mr. Henry Gomez, New York University, New York, N. Y.
69. Mr. Robert J. Smith, Chicago American's This Is the Midwest, Chicago, Ill.
70. Mr. Dixon Y. Miyauchi, State University Teachers College, Plattsburgh, N. Y.
71. Mr. Melvin I. White, Division of Administration, New York, N. Y.
72. Mr. Irving Savell, counsellor at law, New York, N. Y.

ORGANIZATIONS AND INDIVIDUALS SUPPLIED WITH A COPY OF EACH IMPACT STUDY UPON REQUEST

1. Mr. Phillip E. Areeda, the White House, Washington, D. C.
2. Hon. Hale Boggs, House Office Building, Washington, D. C.
3. Mr. William Broom, Ridder Newspapers, Washington, D. C.
4. Mrs. Nona Brown, New York Times Bureau, Washington, D. C.
5. Mr. Meredith S. Buel, Committee of American Steamship Lines, Washington, D. C.
6. Mr. William Clark, the American Legion, Washington, D. C.
7. Mr. Earl Clark, Labor-Management Maritime Committee, Washington, D. C.
8. Mr. Thomas E. Covel, Aluminum Limited Sales, Inc., New York, N. Y.

9. Mr. George Dietz, American Farm Bureau Federation, Washington, D. C.
10. Miss Lucile Dillon, Young Women's Christian Association of the United State of America, New York, N. Y.
11. Mr. Donald W. Dresden, Washington, D. C.
12. Mr. Warren R. Dwyer, Committee on Foreign Trade Education, Inc., New York, N. Y.
13. Mrs. Betty Garber, League of Women Voters, Washington, D. C.
14. Mr. Kenneth Gorman, Baureline, Inc., New Orleans, La.
15. Mr. Archie D. Gray, Gulf Oil Corp., Pittsburgh, Pa.
16. Mr. Samuel Jacobs, United Auto Workers of America, Washington, D. C.
17. Miss Carlotta Kerwin, World Affairs Center for the United States, New York, N. Y.
18. Mr. Stephen Levitsky, United Steelworkers of America, Washington, D. C.
19. Mr. Dave Maceachron, International Chamber of Commerce, New York, N. Y.
20. Mr. Tad Masaoka, Washington, D. C.
21. Mr. John Miller, National Planning Association, Washington, D. C.
22. Dr. Howard S. Piquet, Library of Congress, Washington, D. C.
23. Mr. William J. Russell, Department of Commerce, New York, N. Y.
24. Mr. B. A. Rittersporn, Jr., the European Community for Coal and Steel, Washington, D. C.
25. Mr. Jay Royen, Committee for a National Trade Policy, Washington, D. C.
26. Mrs. Oscar M. Ruerhausen, New York, N. Y.
27. Mr. Bert Seidman, Department of Research, Washington, D. C.
28. Mrs. Laura Somers, Committee for International Economic Growth, Washington, D. C.
29. Mr. Berney Wilburn, American Merchant Marine Institute, Washington, D. C.
30. Mr. Woodbury Willoughby, United States Department of State, Washington, D. C.

Mr. Bow. Were they sent to him at his request?

Mr. KEARNS. The request of someone. I do not know because it was handled by one of our people.

Mr. Bow. I would like to know why they were sent to the Charles Taft organization, whatever it is called, I forget the name now, and if it was at his request I would like to have you insert the request in the record.

Mr. KEARNS. I will say definitely there were no studies sent except on request.

Mr. Bow. I would like to have copies of his request for that.

Mr. KEARNS. All right.

(The information follows:)

COMMITTEE FOR A NATIONAL TRADE POLICY, INC.,
Cincinnati, Ohio, January 9, 1958.

HON. HENRY KEARNS,
Assistant Secretary for International Affairs,
Department of Commerce, Washington, D. C.

DEAR MR. KEARNS: As you are aware from our several conversations, this committee is very much concerned with and interested in the development and expansion of United States foreign trade. This, of course, applies to both exports from the United States and imports into this country.

Consequently, we follow carefully all the many valuable statistical data in this field published by the Department of Commerce, as well as textual reports and publications. While we find this material very complete and of great value, we frequently find that the statistics are not of very recent date by the time they are published in book or pamphlet form. We realize, of course, that the Government cannot afford to print and distribute all such data immediately after it is assembled, but is compelled to hold it for periodical publication. We are wondering if it would not be possible for us to make some arrangement whereby we could have access to such data as soon as it has been tabulated. Obviously, we would not expect to have access to any material that has not been approved for ultimate publication, and only to such material as would be available to any interested citizens or organizations in the United States.

I would appreciate it if you could give your attention to this request at your early convenience.

Respectfully yours,

GEORGE L. BELL, *President.*

Mr. Bow. Did his organization help in the preparation of this material?

Mr. KEARNS. No, sir.

DINNER GIVEN BY ERIC JOHNSTON

Mr. Bow. Did your division or anybody in your group assist in the dinner Mr. Eric Johnston gave here in Washington?

Mr. KEARNS. The dinner?

Mr. Bow. Yes.

Mr. KEARNS. We had some people who participated. The Secretary spoke. I spoke briefly on the question panel. Outside of that, there was no——

Mr. Bow. Any list of people to be invited?

Mr. KEARNS. No, sir.

Mr. Bow. Did your division or the Department of Commerce contribute any funds for that dinner?

Mr. KEARNS. No, sir.

Mr. Bow. You had nothing to do with the $7,000 of appropriated funds that were used in——

Mr. KEARNS. We had nothing whatever to do with Eric Johnston's dinner. There was this other meeting held by these organizations. That is the one in which we participated. We did not actually participate at all in the Eric Johnston dinner, even to appear by invitation.

Mr. Bow. Which one did you participate in?

Mr. KEARNS. The one held by the 100 or so organizations referring to the trade agreements legislation. We only participated by request on the program.

PROMOTION OF UNITED STATES PRIVATE FOREIGN INVESTMENTS

Mr. Bow. You have some statement in here on page 5 on "Promotion of United States private foreign investments." How much of this request goes into that?

Mr. KEARNS. $75,000.

Mr. Bow. Are you familiar with what ICA is doing today on trying to develop foreign trade?

Mr. KEARNS. Yes, sir.

Mr. Bow. With their urging American industry to go abroad, their offering facilities, loans, technical know-how. How does that overlap with this function?

Mr. KEARNS. It doesn't overlap at all. We serve an entirely different function.

Mr. Bow. Would you explain that, please? That is going to come up I think in the foreign aid question very shortly.

Mr. KEARNS. Our efforts are made in the line of providing assistance to industry, business, large or small, that has an interest in investing abroad. In doing that we accumulate, analyze, and disseminate information.

Mr. Bow. Does ICA not do that, also?

Mr. Kearns. I do not know.

Mr. Macy. No.

Mr. Kearns. Not to our knowledge. This is a function the Commerce Department has been involved in for some time. We do not believe it has been done adequately.

Mr. Macy. What we attempt to do, for example, is go to the country of Iran where there is apparently opportunity for private investment. We make a study of the country and its investment opportunities, the laws and regulations and impediments, et cetera, and make that available to potential industries or business people.

We finished one, just as an example, in the Union of South Africa about a year or so ago. We have had over 5,000 requests for this kind of information. We have no real knowledge as to how much investment resulted from it but we believe it is substantial.

We believe that this furthers the policy of encouraging and making it possible for Americans to invest abroad. We perform a service.

Mr. Bow. ICA picks up from there, I suppose?

Mr. Kearns. Our contact is with business generally. Business generally has desire to communicate with the Department of Commerce. We perform that service directly with them.

Mr. Macy. I might add just one indication to show how we are working together with ICA on this program.

We have a project whereby the Foreign Service officers abroad develop investment opportunities. Those are sent in through the State Department and over to us. We publish those, make them available to the public, to business people who might be interested in them.

ICA, at the same time of course, working in their loan program and their development program, come across specific investment opportunities in the various countries. Those are sent in usually through the Foreign Service to the State Department and to us, but many of them come directly to ICA in Washington. They immediately transfer those over to us and we handle them from there. We have eliminated any duplication in this investment opportunity field.

Mr. Bow. Who is it who handles solicitation of business to go abroad? Is it handled by Commerce or ICA?

Mr. Kearns. We do not solicit business. We simply attempt to serve business as it is requested.

Mr. Bow. In other words, if one of these Foreign Service officers says there is an opportunity to open a coal mine some place and they will furnish the money and insure it, et cetera, you do not go out to try to find somebody to do that. ICA does that?

Mr. Macy. We publish those.

Mr. Bow. You publish those.

Mr. Macy. Yes, sir.

FOREIGN TRAVEL

Mr. Bow. What is your present budget for foreign travel? What did we allow in the regular budget?

Mr. Anderson. $15,000 was the request in the regular appropriation.

Mr. Bow. You are asking for $7,000 in this?

Mr. Anderson. That is right.

Mr. Bow. What is the additional travel amounting to $7,000? What does it cover?

Mr. Kearns. It is to send an expert, for example, to Iran to develop the information for a study on investment, or whatever country may be required. That is the major portion of it.

Mr. Macy. Where we develop what we call our investment guide. Its title will be "Investment in," and then the name of the country. We get together all the information we have in the Bureau of Foreign Commerce relative to that country and then send the man to the country, the man who is working on this booklet, to verify and bring up to date and to fill in the gaps on the information we do not have here.

Mr. Bow. Mr. Secretary, I wonder if you would like to correct your statement on that, because you do not jibe with your justification. You say it is the $7,000 to send somebody to Iran to finish a survey. Your justification says to develop investment guide for the European Common Market. Is the European Common Market mixed up in Iran, or what is the situation?

Mr. Kearns. I said that would be an example of Iran. I intended to. It might be Iran or it might be the Common Market, but that is——

Mr. Bow. Your justifications say it is an investment guide for the European Common Market. How many people do we have there working on it now?

Mr. Macy. On these investment guides for the countries in the Common Market, we will put together the material we have on those countries and then we will have to send the men over who work on those particular guides.

Mr. Bow. You said a few minutes ago the State Department has been doing a good bit of that work.

Mr. Macy. The State Department is furnishing us the information through the reporting system of investment opportunities and conditions in the country, et cetera. But for these guides we feel it is necessary to have the man who is working on the booklet to make a first-hand study working with the Embassy people while he is over there.

Mr. Bow. That is all.

Mr. Preston. Mr. Horan?

Mr. Horan. No questions.

JUSTIFICATION FOR ADDITIONAL PERSONNEL

Mr. Preston. With reference to the information contained in the justifications presented to the committee earlier this year in support of your regular bill, were the statements contained in the justifications correct?

Mr. Kearns. I would ask for my staff to answer that.

Mr. Macy. To the best of our knowledge, they were correct.

Mr. Preston. I refer you to page 638 where we find the following language:

> These demands have been accentuated by the need to devote increasing amounts of time and effort on new international developments of interest to United States business such as the European Common Market. The growing

load on geographic divisions is evidenced by 12,876 written inquiries from businessmen in the 1957 fiscal year. In this year, despite an increasing correspondence load, the area divisions prepared 1,362 articles on foreign economic conditions for Foreign Commerce Weekly and 213 publications for World Trade Information Service. In addition, a large number of businessmen's inquiries directed to Commerce Department field offices were answered by supplying the requested information to the field offices. The addition to staff requested under the 1959 budget to handle the increasing workload will, in effect, only bring the office staff to the level of the 1957 fiscal year. However, through a more experienced staff and by constant effort to improve efficiency it is believed that the larger workload can adequately be carried with the requested additions.

Now we gave you an increase of $46,750 over the fiscal 1958 level in the regular bill. You state in your justifications that you believe the larger workload can adequately be carried with the requested additions.

The reduction in your appropriation I believe was $48,000. That would not be over about 4 people perhaps, or 5, maybe 6. Now you are seeking how many—18?

Mr. KEARNS. Total of 28.

Mr. MACY. Eighteen of them on policy work.

Mr. PRESTON. How does this request today jibe with what you told us in April?

Mr. KEARNS. Because of the new circumstances that were imposed after this budget was prepared, this budget request.

Mr. PRESTON. The language found on page 61 of the hearings, testimony by Mr. Macy, is approximately the same justification that you are giving today for these additional positions. You say you want to do the same thing you outlined in the testimony on page 61.

One final question: What is the total foreign investment abroad today by American businessmen?

Mr. KEARNS. About $36 billion, I believe.

Mr. PRESTON. Has the rate of investment increased or has it declined in the last 12 months?

Mr. KEARNS. It has stayed about the same for the last 3 or 4 years. It has varied very little even by quarters. It remains almost constant.

Mr. PRESTON. Gentlemen, that concludes the hearings.

TRAVEL AND TOURIST PROMOTION

Mr. KEARNS. So that I do not get in the trouble I was in this morning, we have another request before the Bureau of the Budget now as a result of a report that was made by Clarence Randall and his commission on foreign travel and tourist trade in which his report—rather an exhaustive examination and detailed report—requests the Department of Commerce to assume new responsibilities that we have not had in the travel and tourist promotion field. In order to meet that we have prepared a budget that would indicate what it would take to do this job. That budget request is presently before the Bureau of the Budget.

Mr. PRESTON. How much is that, Mr. Secretary?

Mr. KEARNS. It amounts to $105,000.

Mr. FLOOD. Tourist promotion where?

Mr. KEARNS. All over the world.

Mr. FLOOD. Promote American tourism?

Mr. KEARNS. Yes, sir.

Mr. Bow. I am glad you have it in the Bureau of the Budget but please do not bring it up here.

Mr. Kearns. I wanted to be sure to inform you.

Mr. Preston. The committee is not prepared to go into that question this morning, but we appreciate the information.

INVESTMENT OPPORTUNITIES IN FOREIGN COUNTRIES

Mr. Flood. One final question to follow up Mr. Preston's last question. Do you think it is fair and reasonable and proper to go to all these lengths and all this expense and all this bother this year and during this coming year, since that is the one we are talking about in this budget request, to induce, to almost seduce, American businessmen to invest their money in many, many foreign countries throughout this world when you know or should know the conditions are chaotic and explosive and volatile as they are, or do you think your responsibility is to collect all this information, give them this advice and say it is up to you what you do, not up to us. "Here is a good place to make a buck." This is the situation.

Now if you go in there, your blood be upon your own head. It is a little complicated, but since you know or should know what the world is like all over the world—it is on fire, rumblings all over the place—do you think as desirable and commendable as the program might be in your judgment and while you are going to say, "Well, this is one way we are going to stop all those things," do you think that is the kind of weapon you should use in your geopolitics, the American businessman's dollar, to urge him, to push him, to invite him, to induce him and seduce him to get in there and help your political endeavors internationally? Do you think that is "baseball"?

Mr. Kearns. Yes; we think the world will continue on and there are a great many areas in the world where it is sound to make investments. We believe the one way you can export the philosophy of the free-enterprise system is by private investment abroad and it is a much better thing than a continual aid program.

Mr. Flood. Even though you have the Sixth Fleet off Beirut and you have issued orders advising them to consider getting out, and the situation in Panama and Cyprus and any place in the Far East, civil war, turmoil all over the place endangering the lives, but it is up to them. If they go in and get hurt, that is too bad.

Mr. Kearns. We try to assist them as much as we can.

Mr. Flood. To get out?

Mr. Kearns. To use the best——

Mr. Bow. The gentleman will find shortly it is not going to bother them much because your coal miners who are out of work and who paid taxes in the past will provide insurance against anything happening to those people abroad.

Mr. Flood. I understand that is part of the program that if and when they get hurt they will be taken care of anyhow.

Mr. Bow. Under this loan program they will buy insurance against expropriation of property.

Mr. Flood. You take your company in Beirut, the situation there is chaotic, the situation of the prowestern government is in danger, but if you open a tire factory there you may save that government

which is very important to the Western World. If things go bad and Chamoun gets thrown out and you get thrown out with him, well you will not get hurt anyhow.

Mr. Bow. You furnish a tire factory for the Soviets.

Mr. Preston. Thank you, gentlemen.

AFTERNOON SESSION

Mr. Preston. The committee will come to order.

Mr. Bow. Mr. Chairman.

Mr. Preston. Yes, Mr. Bow.

TRADE IMPACT STUDIES

Mr. Bow. Will the chairman yield to me for a brief discussion of the matter we went into this morning?

Mr. Preston. I yield, yes.

Mr. Bow. Mr. Chairman, there has come to my attention a letter which I think is pertinent to the matter we were considering this morning?

Mr. Preston. What was the matter?

Mr. Bow. The matter of these brochures we put out on imports from foreign countries.

I would like to read this letter, omitting names and places. It is from a League of Women Voters of a place in the West addressed to a Member of Congress. It reads as follows:

Dear Congressman: It has come to our attention that the Department of Commerce will make a study of the effect of imports from foreign countries upon the economy of any congressional district in the United States at the request of a Member of Congress from that districut. The League of Women Voters of (blank city) believe such a study would be very helpful to the League of Women Voters of (blank State).

We hope you, along with Senators (blank and blank) will request that this study be undertaken by the Department of Commerce as soon as possible and that you will make the findings public.

Thank you very much for your cooperation.

It is signed by the League of Women Voters of (blank city) and a copy sent to the president of the League of Women Voters of (blank State).

I would request, Mr. Chairman, that copies of correspondence between the Department of Commerce and the League of Women Voters be submitted to this committee for consideration.

Mr. Preston. I might say that confirms a suspicion I had that there was an organized campaign to use these studies, and we will request the Department of Commerce to insert at this point the correspondence between the appropriate agency of the Department of Commerce and the League of Women Voters. I am glad you saw fit to call it to the attention of the committee, Mr. Bow.

Mr. Bow. That is all I have at this time, Mr. Chairman.

(The information requested follows:)

March 21, 1958.

Mrs. Robert McElroy,
Parkview Apartments, Apartment 518–A,
Collingswood, N. J.

Dear Mrs. McElroy: The Department of Commerce has received congressional requests for studies on the impact of foreign trade in certain regional areas. We are attempting to answer these requests as rapidly as possible.

Enclosed are copies of two of these studies as you requested. Due to the heavy demand and the limited printing, I regret that I am unable to send you all of these studies.

We are certainly aware of your organization's interest in reciprocal trade legislation. We have met with your national president on several occasions, and we are cognizant of the splendid work the League of Women Voters is doing.

Sincerely yours,

GILBERT A. ROBINSON.

COLLINGSWOOD, N. J., *March 13, 1958.*

DEPARTMENT OF COMMERCE,
Washington, D. C.

GENTLEMEN: According to an article in the New York Times copies of Foreign Trade Impact Studies, which the Department made, are available on request. If possible I would like to receive copies of one or more of these reports. I am international relations chairman of the League of Women Voters of Camden, N. J. I am sure you know of our organization's interest in reciprocal trade legislation. Thank you.

Very truly yours,

ELIZABETH MCELROY
Mrs. Robert McElroy.

MARCH 21, 1958.

Mrs. P. M. LEIGHTON,
Vice President, League of Women Voters of Bridgeport,
Trumbull, Conn.

DEAR MRS. LEIGHTON: We are in receipt of your letter of March 17, 1958, in which you request a copy of the First and the Fourth Congressional Districts of Connecticut.

Pursuant to that request, enclosed are copies of the two Connecticut studies.

Sincerely yours,

GILBERT A. ROBINSON.

LEAGUE OF WOMEN VOTERS OF BRIDGEPORT,
Bridgeport, Conn.

DEPARTMENT OF COMMERCE,
Washington, D. C.

DEAR SIR: In an editorial in the New York Times last week, they mentioned a study which your Department has made in two congressional districts in Connecticut as to the effect of foreign trade in these areas. I should very much like a copy of this study both in Connecticut and in any other districts in the United States.

Sincerely yours,

Mrs. P. M. LEIGHTON, *Vice President.*

MARCH 19, 1958.

Mrs. RALPH R. MENDELSON,
Director of the Board, League of Women Voters of Ohio,
Cincinnati, Ohio.

DEAR MRS. MENDELSON: The Department of Commerce has received congressional requests for studies on the impact of foreign trade in certain regional areas. We are attempting to answer these requests as rapidly as possible.

Certain Congressmen from Ohio have requested that these studies be undertaken in their districts. However, as you realize, these studies take some time, and it will be several weeks before they are available. When they are available, we will forward them to you.

Sincerely yours,

HENRY KEARNS,
International Affairs.

LEAGUE OF WOMEN VOTERS OF OHIO,
Cincinnati, Ohio, March 12, 1958.

THE SECRETARY OF COMMERCE,
Washington, D. C.

SIR: It has been called to my attention that your Department has made a survey of 120 congressional districts to determine the effect of export and import trade. The League of Women Voters is interested in the passage of Reciprocal Trade Agreements Act. We are trying to collect figures on the effect of trade on Ohio industry, and we thought that one of the congressional districts under survey is in our State. If one or more of the districts are in Ohio would you send me the information that you have obtained. Incidentally, if you have any information on the relationship of trade and Ohio, I would appreciate your sending it to me at my home address of 3137 Fairmount Boulevard, Cleveland Heights 18, Ohio.

I thank you for your assistance.

Yours very truly,

MRS. RALPH R. MENDELSON,
Director of the Board, League of Women Voters of Ohio.

MARCH 10, 1958.

MRS. PAUL BOWDEN,
Resource Chairman, World Trade,
League of Women Voters, Yakima, Wash.

DEAR MRS. BOWDEN: The Department of Commerce is attempting to answer congressional requests for studies on the impact of foreign trade in their areas. The Department has had a request from the Congress for a study in the Fifth Congressional District of Washington. Of course, a study of this kind takes several weeks. However, when it is available we will send you a copy.

Enclosed also per your request is some other material which might be helpful, together with a sample copy of an impact of foreign-trade study.

Sincerely yours,

GILBERT A. ROBINSON,
Special Assistant for Trade Agreements Legislation.

LEAGUE OF WOMEN VOTERS,
Yakima, Wash., February 27, 1958.

DEPARTMENT OF COMMERCE,
Washington, D. C.

DEAR SIR: We understand your office is working on a study of beneficial effects of foreign trade in various congressional districts. We are interested in securing information of this kind for our area, which is district 4 in Washington State, and we would appreciate a copy of this report, if you have them for public distribution.

If you do not have one for district 4, any district in Washington, Oregon, California, or Idaho would be helpful to us.

We would also appreciate any other bulletin or pamphlet your office may have that would assist us in our world trade information to the public program.

Thank you.

Sincerely yours,

MRS. PAUL BOWDEN,
Resource Chairman, World Trade.

P. S.—If there is a charge for these items, please send them and bill me for them.

MARCH 18, 1958.

MRS. NORMAN M. HINERFELD,
Los Angeles, Calif.

DEAR MRS. HINERFELD: The Department of Commerce has received congressional requests for studies on the impact of foreign trade in certain regional areas. We are attempting to answer these requests as rapidly as possible.

I understand that there has been a request for a Los Angeles congressional district. However, it takes some time to develop these studies. When it is available I will forward it to you.

Enclosed is a copy of one of these studies as you requested.

Sincerely yours,

GILBERT A. ROBINSON.

LOS ANGELES, CALIF., *March 8, 1957.*

UNITED STATES DEPARTMENT OF COMMERCE,
Washington, D. C.

(Attention: Office of the Secretary.)

DEAR SIRS: I understand that Commerce staffers are drawing up 120 reports of the ways in which 120 congressional districts are benefited by foreign trade.

As a member of the Los Angeles League of Women Voters, I should be interested in seeing one of these reports. Is any being made up for a Los Angeles congressional district? If so, please send me a copy of that report. If not, please send me a copy of any completed report available.

Thank you for your attention.

Very truly yours,

RUTH J. HINERFELD
Mrs. Norman M. Hinerfeld.

THURSDAY, JUNE 26, 1958.

COAST AND GEODETIC SURVEY

WITNESSES

GEORGE T. MOORE, ASSISTANT SECRETARY FOR ADMINISTRATION
OSCAR H. NIELSON, DEPARTMENTAL BUDGET OFFICER
REAR ADM. H. ARNOLD KARO, DIRECTOR, COAST AND GEODETIC SURVEY
REAR ADM. CHARLES PIERCE, ASSISTANT DIRECTOR
CAPT. I. E. RITTENBURG, ASSISTANT DIRECTOR FOR ADMINISTRATION
JOHN M. AMSTADT, BUDGET OFFICER

GEOMAGNETIC STATION, HONOLULU, T. H.

Mr. PRESTON. The next item we shall take up is the Coast and Geodetic Survey, and we shall insert in the record at this point pages 1 through 5.

(The material follows:)

(H. Doc. No. 394)

Construction and equipment geomagnetic station

Request (for fiscal year 1959) ---------- $400,000

PURPOSE AND NEED FOR SUPPLEMENTAL FUNDS

To provide for necessary funds, in fiscal year 1959, for the design, construction and equipping of a Geomagnetic Station in Honolulu, T. H. This station is required to replace existing facilities whose functions will become inoperative by impending construction.

PROGRAM AND PERFORMANCE

To replace existing facilities whose functions will become inoperative by impending construction work.

Construction and equipment, geomagnetic station

	Presently available	Revised estimate	Difference
Program by activities:			
1. Design and supervision		$22,000	+$22,000
2. Construction		150,000	+150,000
3. Equipment and outfitting			
Total program costs		172,000	+172,000
4. Relation of costs to obligations: Obligations incurred for costs of other years (unpaid undelivered orders), net		193,000	+193,000
Total program obligations		365,000	+365,000
Financing:			
Unobligated balance carried forward		35,000	+35,000
Appropriation (new obligation authority)		400,000	+400,000

Object classification

	Presently available	Revised estimate	Difference
Program cost:			
02 Travel		$4,500	+$4,500
06 Printing and reproduction		2,500	+2,500
07 Other contractual services		15,000	+15,000
10 Lands and structures		150,000	+150,000
Total program costs		172,000	+172,000
Relation of costs to obligations: Obligations incurred for costs of other years		193,000	+193,000
Total program obligations		365,000	+365,000

JUSTIFICATION

$400,000 is requested for the construction of a new magnetic and seismological observatory in Hawaii to replace the existing observatory at Honolulu whose operations will be impaired by the impending construction of an oil refinery.

Under authority contained in Public Law 373, 80th Congress (61 Stat. 787), the Department of Commerce operates 7 magnetic observatories. These observatories are located at Fredericksburg, Va.; Tucson, Ariz.; Sitka, Alaska; College, Alaska; Point Barrow, Alaska; Ewa, Oahu, T. H.; and San Juan, P. R. The observatories are geographically located to provide a framework of basic magnetic observations. These observations are supplemented by short duration magnetic observations made at selected locations throughout the United States and its Territories by mobile field parties.

The collection and use of magnetic information is an essential part of the basic data used in the compilation of both nautical and aeronautical charts. In addition, the Department of Commerce has been designated as the depository of the Government for all magnetic data and for the assembly and distribution of these data. Many government and private agencies and individuals utilize these data since they are basic to the study of the earth's interior, solar activity, and upper atmosphere, and other studies involving electrical phenomena.

The Standard Oil Co. of California has acquired land adjacent to our magnetic observatory in the Territory of Hawaii on which the Standard Oil people have notified us that they plan to begin construction of a $50 million oil refinery in the latter part of 1958. It has been determined that the actual construction operation and the presence of the oil refinery with its elements of magnetic disturbances will impair the observations and recordings at the observatory to the extent that they will have little or no value.

Negotiations are currently underway with the Navy to acquire title to a tract of 175 acres of undeveloped land near Ewa Beach, Oahu. The Navy has indicated in writing their willingness to transfer the land to this Department for the observatory site. Numerous surveys and tests have been conducted on the island and the proposed site on coral formation is magnetically satisfactory—an advantage probably not to be found elsewhere in the predominantly volcanic lands of Hawaii. The size of the tract offers good protection from encroachment in an area that appears to assure freedom from the danger of future disturbances.

Mr. PRESTON. Admiral, do you have a prepared statement to make?

Admiral KARO. I do not have a prepared statement.

Mr. PRESTON. Will you make an oral statement on the request?

GENERAL STATEMENT

Admiral KARO. Supplemental funds in the amount of $400,000 are requested for the construction of a new magnetic and seismological observatory in Honolulu, Hawaii, to replace the existing observatory at Honolulu whose operations will become useless by the construction of a $50 million oil refinery adjacent to the present observatory. The actual construction and the presence of the oil refinery together with its offshore facilities which will pass in front of our present installation will cause unpredictable effects in the earth's magnetism and will render the present observatory useless. Because of this situation we have to move the observatory to a new site which has been selected on Navy property. The Navy is now in the process of transferring this tract of 175 acres to us for the construction of the new observatory.

We have had an observatory in Honolulu for over 50 years. The first one was constructed in 1902. In any scientific endeavor continuity of data is all-important, so it is most essential that we get the new observatory constructed and in operation as soon as possible.

USE OF INFORMATION FROM OBSERVATORY

Mr. PRESTON. What use is this information put to that you obtain from this observatory in Hawaii?

Admiral KARO. One of the most persistent quests has been man's study to understand the mysterious force of magnetism which pervades and completely encircles the earth. It cannot be tampered with. So in man's quest to understand the forces of nature it is imperative that we catalog or keep track of the changing magnetic field around the earth. It is not constant. It is undulating like the sea and is never at rest, and at times there are what we call magnetic storms.

Mr. PRESTON. The Bureau of Standards does the same thing, does it not?

Admiral KARO. No. We furnish the Bureau of Standards magnetic data.

Mr. PRESTON. Are you saying they do not have similar instruments to collect the same information you collect?

Admiral KARO. I would say that they do not. We furnish them the results of our observations.

Mr. PRESTON. Is there any reason why we should not just close this installation instead of moving it? Tell us one place you apply

this information that serves a useful purpose in the operation of your agency.

Admiral KARO. We use the magnetic data in making corrections to our nautical and aeronautical charts.

Mr. PRESTON. What percentage of change do you have in your nautical charts in the course of 12 months based on the information obtained from this observatory?

Admiral KARO. I would not say the percentage is very great at any one point.

Mr. PRESTON. Is there any change?

Admiral KARO. Yes.

Mr. PRESTON. Give me a percentage.

Admiral KARO. I would say in some places the changes amount to 2 or 3 percent a year. Sometimes it is plus and sometimes it is minus. In the southeastern part of the United States it has not followed the predicted pattern and there has been a marked change.

NECESSITY FOR MAGNETIC STATION

Mr. PRESTON. Is it your testimony that this installation is essential to your successful operation as an agency?

Admiral KARO. Yes, sir.

Mr. PRESTON. Completely essential?

Admiral KARO. I might add one other thing.

Mr. PRESTON. Is it completely essential to your successful operation as an agency?

Admiral KARO. For us to discharge our overall responsibilities; yes.

Mr. PRESTON. Do not qualify it, Admiral. Is it completely essential to your successful operation as an agency?

Admiral KARO. If I could bring in one other point.

Mr. PRESTON. I would rather you would answer the question directly.

Admiral KARO. Yes, sir.

Mr. PRESTON. Why?

Admiral KARO. The seismic sea-wave warning system of the Pacific is hinged on Honolulu and we have been able, since the disaster of April 1946, to give such timely warning to the communities that there has been no loss of life since we have installed that system.

Mr. PRESTON. Is it an accurate statement to say that this is an installation that would furnish desirable information not completely essential?

Admiral KARO. No, sir. This is the International Geophysical Year and this is an important station to standardize the observations in the islands throughout the Pacific so that they can be compared directly.

Mr. PRESTON. How long have you had this station?

Admiral KARO. The first station was established in Honolulu in 1902. During the latter part of World War II the Navy wanted to expand their airfield and the station was moved to its present location at the expense of the Navy. We have had a constant operation there for 56 years.

NUMBER OF PERSONNEL

Mr. PRESTON. How many people do you have there operating that station?

Admiral KARO. There are four, sir.

Mr. PRESTON. Only four?

Admiral KARO. Yes.

Mr. PRESTON. Is the time divided between the four? Is the station operated on an 8-hour basis or 12 hours or 24 hours?

Admiral KARO. The seismic sea-wave warning system requires constant surveillance.

Mr. PRESTON. How many hours is the station operated?

Admiral KARO. The station itself operates continuously but the employees are on a 8-hour day, 7 days per week, but if there is an alarm of the seismic sea-wave warning system they immediately come in to determine whether or not a seawave is expected. Somebody has to be there 24 hours a day.

Mr. PRESTON. Why did you not call that to our attention when the regular bill for 1959 was before the committee?

Admiral KARO. At that time we did not know definitely that this oil refinery was going to be built.

Mr. PRESTON. When was it built?

Admiral KARO. It has not been built yet, but they expect to start construction, according to the last letter we have received, before the end of the year. It is necessary that we get the new station in operation and transfer the base values from the present site to the new site in order to have continuity of records.

Mr. PRESTON. Any questions?

Mr. FLOOD. No questions.

Mr. CLEVENGER. Is this oil from the mainland that is going to be refined there?

Admiral KARO. I do not know where the oil will come from.

Mr. CLEVENGER. There is no oil there?

Admiral KARO. Not to my knowledge. It will be shipped in.

Mr. CLEVENGER. They are bringing in the crude?

Admiral KARO. They are bringing in the crude oil and refining it there; yes.

Mr. CLEVENGER. That is all.

Mr. PRESTON. Mr. Bow.

TOTAL COST OF STATION

Mr. BOW. Admiral, is this the total cost?

Admiral KARO. As far as I know, yes. I might say when we went to GSA for the original estimate of construction cost they came up with about $618,000. We reviewed the costs with them, went over the plans, and reduced their total to $586,000. We checked with the Navy and they said the amount was about right. The Bureau of the Budget went over it again and we have every expectation we can do it for $400,000. We can complete the buildings; whether we can build the fence required and the other things, I do not know. We hope so.

Mr. BOW. You feel you will have sufficient for everything necessary.

When were you advised about that refinery?

Admiral KARO. April 15.

Mr. BOW. This year?

Admiral KARO. Yes. That came from our officer in charge at Honolulu.

Mr. BOW. That was April 1958?

Admiral KARO. Yes.

Captain RITTENBURG. We received a letter in the middle of April. That was the first time we could get a definite date from the Standard Oil Co. for starting construction.

TYPE OF CONSTRUCTION

Mr. BOW. Is this a tower construction or surface construction?

Admiral KARO. My understanding is it will be a refinery——

Mr. BOW. I am talking about your construction.

Admiral KARO. Just surface buildings and a seismograph vault.

LAND AVAILABILITY

Mr. BOW. Are you having to pay the Navy for the land?

Admiral KARO. No.

Mr. BOW. Is there sufficient land around the new site to protect you against anything else happening?

Admiral KARO. Yes. We feel this tract of 175 acres will give us protection, to the best of our knowledge and belief, for some time to come.

Mr. BOW. Will you have to have new equipment or will you move your present equipment?

Admiral KARO. Our instruments will be moved from the present station.

Mr. BOW. I believe that is all.

Mr. PRESTON. Mr. Horan.

Mr. HORAN. Mr. Chairman, for my own information, the Interior Department has a station on Hilo, what is the nature of that?

Admiral KARO. I think the one on Hilo is a part of their volcanic studies.

Mr. HORAN. I was wondering if it was possible to combine the two?

Admiral KARO. No, sir. The tremors from the volcano would cause the seismograph to be tripped if it were sufficiently sensitive to record distant earthquakes.

The main part of this installation at Honolulu is a magnetic observatory.

Mr. PRESTON. Admiral, what land are you going to locate the observatory on?

Admiral KARO. It is on Navy land.

Mr. PRESTON. One hundred and seventy-five acres?

Admiral KARO. One hundred and seventy-five acres, yes; which they are going to declare "surplus" for transfer to us.

Mr. PRESTON. The entire 175 acres will be utilized for this purpose?

Admiral KARO. It will be utilized for protection.

Mr. PRESTON. I understand that, but how close is this land located to a city or a municipal development?

Mr. AMSTADT. This map might show it a little bit more clearly.

Mr. PRESTON. How close would it be to a city or a municipal development?

Admiral KARO. The city would be on this other side.

Mr. PRESTON. About how many miles?

Admiral KARO. Five miles.

Mr. PRESTON. It is an area that is populated?

Admiral KARO. No, sir. When we investigated the proposed site we had to get a bulldozer to clear away the brush so we could make the necessary determinations to be sure that it was magnetically acceptable for the new observatory.

UNPAID AND UNDELIVERED ORDERS

Mr. PRESTON. In your justifications, you show an item of $193,000 for obligations incurred for the cost of other years. Then you have a parenthesis and unpaid, undelivered orders.

What does that item represent?

Admiral KARO. I will ask Mr. Amstadt to reply to that.

Mr. AMSTADT. This amount would be for items which would not have been costed during fiscal year 1959. It would include some of the items of construction costs which, by paying only portions of the cost at various stages of construction, would not be costed in fiscal year 1959.

Mr. PRESTON. Are you saying in effect that you have already expended some funds that you want reimbursement for now?

Mr. AMSTADT. No, sir.

Mr. PRESTON. What other years are you referring to in this language, future years?

Mr. AMSTADT. Future years.

Mr. PRESTON. Beyond fiscal year 1959?

Mr. AMSTADT. Yes, sir.

Admiral KARO. Obligated but not liquidated.

HOUSING COSTS

Mr. PRESTON. As to these houses that are going to be built, three bedroom homes, what is the cost of each?

Admiral KARO. I think around $20,000 or $25,000.

Captain RITTENBURG. These will be built in line with Budget Bureau specifications for housing units in Hawaii.

Mr. PRESTON. Is it $20,000 or $25,000?

Mr. AMSTADT. $20,000 is the estimated cost for each of the four buildings.

Mr. PRESTON. What is the $35,000 indicated in the green sheets for? Is that a carryover item? Is it an unobligated balance?

Mr. AMSTADT. Yes; it is an unobligated balance carried forward from 1959 to 1960 for contingencies and reservations. They are contingencies estimated when granting the construction contract, sir.

Mr. PRESTON. You cannot identify any particular item or sum that is involved in this $35,000?

Mr. AMSTADT. No, sir; not at this time. A part of the estimate is for construction reservations and contingencies and the remainder for such items as approaches, fences, and so forth.

Mr. PRESTON. Admiral, are you absolutely certain that this installation is essential to your operation?

Admiral KARO. Yes, sir.

Mr. PRESTON. You have no reservation about it as being completely essential?

Admiral KARO. No, sir.

SALARIES AND EXPENSES

INCREASED PAY OF COMMISSIONED OFFICERS

Mr. PRESTON. We will take up the next item, "Salaries and expenses."

We will insert page 1 in the record.

(The page referred to follows:)

(H. Doc. No. 394)

Salaries and expenses, 1959

Request (for fiscal year 1959)	$491,000
Budget estimate, 1959	$11,750,000
Employment:	
Average number, budget estimate, 1959	1,518
Number involved this estimate	None
Actual employment May 31, 1958	1,650

PURPOSE AND NEED FOR SUPPLEMENTAL FUNDS

To provide the necessary additional funds in excess of the amounts contained in the 1959 budget estimate for the adjustment of the existing pay scales of crews of vessels in compliance with section 202 (8), Public Law 429 (81st Cong.), and for the increased pay of active and retired commissioned officers as prescribed by Public Law 85–422.

GENERAL STATEMENT

Mr. PRESTON. Will you speak to that, Admiral?

Admiral KARO. Yes, Mr. Chairman.

Supplemental funds in the amount of $491,000 are requested for the increased pay of active and retired commissioned officers as prescribed by Public Law 85–422 ($169,000), and to provide for adjustment of the existing pay scales of crews of vessels ($322,000) in compliance with section 202 (8), Public Law 429 (81st Cong.).

For the past year, and longer, we have made an intensive study of the compensation and rating structure of our crews of vessels in order that it may reflect present-day requirements and comply with section 202 (8), Public Law 429 (81st Cong.), which states that:

> The compensation of crews of vessels shall be fixed and adjusted from time to time as nearly as is consistent with the public interest in accordance with prevailing rates and practices in the maritime industry.

As a result of the study recently completed by the Personnel Office of the Department of Commerce and the Coast and Geodetic Survey, a new rating structure and pay-scale tables have been prepared and agreed upon for adoption on July 1, 1958. I would like to call attention to the fact that the printed copy of our estimates said July 1, 1959, which is a typographical error.

It is firmly believed that this new pay structure complies with Public Law 429 and is a necessary step in providing a modern, up-to-date pay structure for our vessel employees. We feel it will increase overall morale and, we hope, increase efficiency and assist the more qualified crew members into making this their career service.

The cost of these pay increases cannot be absorbed. To do so would further reduce our ability to perform essential nautical and aeronautical charting program operations and reduce still further our other services, such as providing geodetic control for the Federal mapping and other programs which fall far short of meeting existing legitimate requirements.

As a matter of record, since 1952, the Bureau has had to absorb $700,000 in pay raises and similar items, most of which of necessity had to be taken from program. Consequently, we now employ 487 fewer personnel than in 1952. This in the face of increased requirements for our products and services.

Mr. PRESTON. I think maybe I had better ask Mr. Nielson some questions about this item. Does this affect everybody from top to bottom in the Coast and Geodetic Service?

Mr. NIELSON. Mr. Chairman, this refers only to the crews of vessels in the Coast and Geodetic Service. This does not cover pay for the other items.

NEED FOR PAY ADJUSTMENTS

Mr. PRESTON. What is the percentage of increase per person involved? Is there an average that you can give?

Mr. NIELSON. Do you have that?

Mr. AMSTADT. The average percent was 26.5.

Mr. PRESTON. Increase in compensation?

Mr. AMSTADT. Yes, sir.

Mr. PRESTON. Is it possible that we have been derelict through the years in paying these people to the extent of 26 percent?

Admiral KARO. Yes, sir. We have not been derelict with respect to the full 26 percent, but we have—I will admit—been derelict to some extent, and I feel that, in all justice, it is time that we brought their pay up to the standard required by law. In fact, as I mentioned earlier, I felt all along that their whole pay structure was not realistic. We have spent considerable time during the past year in reviewing the whole system and working up a plan to renovate, or bring up to date, our archaic crew-pay structure.

Mr. PRESTON. It surprises me very much, as one member of this committee, that an agency of the Government could be 26-percent derelict in the amount of compensation that is paid, because, by and large, Federal employees are paid on a higher scale than people in comparable jobs in private industry.

Admiral KARO. Yes, sir.

Mr. PRESTON. Except in certain specialized areas. Suppose we take an example.

Give me the type of person that would be affected by this. Would he be someone who is an engineer or an assistant engineer?

Admiral KARO. Yes, sir; the chief marine engineer.

Mr. PRESTON. How much would he make before the increase, and how much does he make now with the increase?

Admiral KARO. Here is one specific example: Present pay is $765, and the new pay would be $925.

Mr. PRESTON. Per month?

Admiral KARO. Yes, sir.

Mr. PRESTON. What would his job be?

Admiral KARO. Chief marine engineer on one of our larger ships.

Mr. PRESTON. Give us the chart showing the increases.

Admiral KARO. The chart is on page 11. That does not show the increases but shows our pay scale as compared to the maritime positions.

Mr. PRESTON. You are trying to bring the Government scale up to the private maritime level; are you?

Admiral KARO. Basic pay, sir, not the practices. The practices add about 50 percent more to the maritime level. Here is a list of specific individuals, by names, ships, ratings, and present scale.

Mr. PRESTON. Admiral, can you explain why this adjustment has not been made previously?

Admiral KARO. Well, Mr. Chairman, part of it was that we did not realize the rate at which the maritime industry had advanced its pay scales. I do not know how to put this, but the other factor was a shortage of funds to get our job done and to discharge our responsibilities in all of our various spheres.

Mr. PRESTON. Was the increase brought about as a result of negotiations between the employees involved and yourselves, or was it a voluntary thing?

Admiral KARO. It is a voluntary thing. When I realized the extent to which we were out of line, the only thing to do was to take it on the chin and tell you people. The crews are entitled to what the law says they shall have.

As I mentioned in quoting the law, it says—

consistent with the public interest and in accordance with prevailing rates and practices.

We feel that the practices in the maritime industry should not apply to our type of operations, but the basic pay scales which we are trying to approach should. Our entering scale of the various rates is below the maritime, but if a man makes a career out of our service, he eventually gets slightly more than the basic scale.

Mr. PRESTON. You cleared this with the Commerce Department?

Admiral KARO. Yes, sir. In fact, the whole study was entered into by the Departmental Personnel Office together with our Personnel Office.

We went over it, and I can assure you that they went into it with a fine-tooth comb and asked the same questions you have asked, sir.

Mr. NIELSON. I might say, Mr. Chairman, that the Department discussed this at length with the admiral and felt that this would, and should, be put into effect, effective July 1.

Mr. PRESTON. Mr. Nielson, why has it not been done before, if it is material and necessary now? Why was it not necessary a year ago?

Mr. NIELSON. Mr. Chairman, I think it was probably necessary a year ago. I am not sure, as the admiral says, that they were completely aware of this problem, but as soon as we were aware of it, we felt that their employees' pay should be adjusted.

Mr. PRESTON. It certainly is unlikely that the employees themselves were unaware of it. They are the ones who first find out about the possibilities, maximum possibilities, under any existing law and regulations.

Why did you deny them that up until this time?

The question has been posed, I am certain, has it not?

Mr. NIELSON. Mr. Chairman, I know of no request in the last couple of years for a pay increase.

Mr. PRESTON. Prior to that time?

Mr. NIELSON. I am not sure of even the last 5 years.

Admiral KARO. I can answer that. We have had requests, yes, and about 2 years ago, or a little over 2½ years ago, we made a slight adjustment. Eighteen months ago I felt that the whole pay structure was archaic and we started looking into it. Rather than make a piecemeal adjustment, we determined that our whole pay structure should be overhauled from top to bottom. We told the men in the field that we were working on the problem and we hoped to consumate it this year. That is one reason we have not had requests. We have assured them on our inspection trips that the question is being fully studied and that they will be given their just due.

Mr. PRESTON. According to the schedule that you have given to the committee, the new adjusted rates are still lower than the private maritime, privately owned companies who operate ships.

Admiral KARO. When we consider their practices on overtime and everything, yes. The basic pay, the entrance rates, are slightly under. If a man has enough longevity, his pay would be slightly over the basic pay of the maritime, which we feel is justified. The longer a man stays with an organization the more valuable he becomes. I think that is a recognized practice in all Government operations.

Mr. PRESTON. These are people who go to sea and remain away from home long periods of time?

Admiral KARO. Yes, sir.

Mr. PRESTON. Quite often under hardship circumstances?

Admiral KARO. Yes, sir.

Mr. PRESTON. Are there any questions on this item?

Mr. BOW. Admiral, how does this compare with the Coast Guard?

Admiral KARO. They are an enlisted service.

Mr. BOW. It is considerably less than this?

Admiral KARO. Yes, except when you get to the warrant officers. I might say that we explored the possibility of an enlisted service, which then meant that we would have to put in our own judge advocate system and so forth, and the overhead of maintaining that and the various other things. It also meant that you would have to have a full complement the year around. After studying all phases and consulting with the Coast Guard, they advised us that they thought it would be better for our type of operation to stick to our present type of procedure in manning our ships. I also discussed it with the committee which I chair for cooperation with the armed services, and they discussed the matter of an enlisted service with their specific services. The final result was that they all recommended that we stick to our present type of procedure in manning our ships for the type of operation we have.

Mr. BOW. Is there any pension or retirement plan for these men?

Admiral KARO. They come under the civil-service retirement plan.

Mr. BOW. How does that compare with the maritime retirement?

Admiral KARO. I am not conversant with what the maritime has for retirement. Whatever the union agreements are, I am not sure.

Mr. BOW. That was not taken into consideration in the determination of this wage scale?

Admiral KARO. Yes, our men have retirement and continuity of employment. That is why we felt that the practices of the maritime industry should not be included. We felt that stability of employment, retirement, and certain other benefits, largely offset the practices of the maritime industry.

Mr. BOW. That is all.

Mr. PRESTON. Thank you, gentlemen.

Admiral KARO. Thank you, sir.

THURSDAY, JUNE 26, 1958.

WEATHER BUREAU

WITNESSES

GEORGE T. MOORE, ASSISTANT SECRETARY FOR ADMINISTRATION
OSCAR H. NIELSON, DEPARTMENTAL BUDGET OFFICER
F. W. REICHELDERFER, CHIEF, WEATHER BUREAU
D. M. LITTLE, DEPUTY CHIEF
T. P. GLEITER, BUDGET OFFICER
VAN A. NEELY, BUDGET ANALYST

Mr. PRESTON. The next item we shall take up is the Weather Bureau and we shall insert in the record at this point pages 1, 2, 3, 3(a), 3(b), and page 9, except the last sentence on page 9.

(The pages follow:)

(H. Doc. 394)

DEPARTMENT OF COMMERCE—WEATHER BUREAU

Salaries and expenses

Request	$840,000
Budget estimate	$40,000,000
Employment:	
Average number, current appropriation	4,419
Number involved this estimate	31
Actual employment May 31, 1958:	
Permanent	4,166
Other	2,320
Total	6,486

Purpose and need for supplemental funds

	Positions	Average number	Personal services	Other objects	Total
Summary of requirements:					
Research: Hurricane research	22	16.7	$109,200	$570,800	$680,000
General weather services: Radar weather warnings	75	14.3	92,200	67,800	160,000
Total, salaries and expenses	97	31.0	201,400	638,600	840,000

JUSTIFICATION

Hurricane research

The national hurricane research project was organized in the wake of the disastrous hurricanes of 1954–55 for the purpose of developing better techniques for predicting these storms and other destructive atmospheric disturbances. The project also keeps in view the possibilities of modification or control of the factors that lead to the development and erratic behavior of these storms. Such atmospheric disturbances must result from definite physical causes and their development and behavior are determined by physical laws. When these determining factors and laws are fully known, it is reasonable to expect that their origin and development can be anticipated and the practical possibilities of their control ascertained.

When the national hurricane research project was organized in 1956, it was expected that 3 years of data collecting would give sufficient basic information to enable scientists to proceed with research. The data collecting program was based on use of military aircraft (B–47 and B–50's) to fly into hurricanes to record the essential meteorological elements. Because of unavoidable delays in instrumenting of aircraft together with the relative infrequency of hurricanes during the last 2 years, the project has up to the present time accumulated only about one-third of the minimum information required for this research. The Department of Defense has provided excellent cooperation in its aircraft support and with much difficulty has arranged to provide the aircraft through the hurricane season this year (up to November 1958). We are informed that new requirements placed on the Air Force will prevent it from continuing to operate the aircraft for this project after 1958.

Evaluation of the data collected during the past two seasons shows that the data collecting phase will have to be continued through 1959 and probably beyond if the research program is to achieve its purposes. The Air Force has agreed to loan aircraft to the Department of Commerce to enable us to continue the project but the operating costs and responsibilities of operation will have to be carried by the Department of Commerce. The estimates herein provide for continued operation of three aircraft after October 31, 1958. This will enable us to continue the hurricane research program and will also augment data gathering for research in the development of other atmospheric disturbances that lead to destructive storms like tornadoes.

To illustrate the factors that may be keys to formation and development of hurricanes—factors still unmeasured and to a large extent unknown—the possible influence of ocean temperatures may be cited. Some meteorologists have theorized that hurricanes form only when ocean temperatures are above certain critical values. Moreover, the water vapor in the atmosphere and the circulation of the general wind streams in the subtropics must also be crucial factors. Their exact roles must be determined and effects measured before methods of forecasting and warning can be perfected.

As another example, the conditions for formation of tornadoes may involve masses or tongues of denser air as well as certain critical values of moisture content and temperature changes at upper levels of the atmosphere. These and other pertinent factors must be understood in order to develop better methods for predicting tornadoes and for determining how and to what extent their development may be modified or controlled.

In pursuing these studies of storms, it is planned to obtain more weather data from ships at sea and to experiment with a fixed automatic weather station moored at a strategic location in the Gulf of Mexico. In this research the Bureau will have the cooperation of the Coast Guard and the Navy. The studies

will also include consideration of coastal contours that affect high tides and storm surges which accompany hurricanes as they sweep inland and which cause the greatest loss of life and damage to property. These studies will be accelerated in connection with the present research proposal. They will include evaluation of how coastal flooding is affected by shoals, bays, normal tides and currents, and gale friction.

In summary, the major requirements to support continuation of the hurricane research project and research flights into Midwest severe storms are as follows:

1. Costs associated with operating 3 research aircraft		$453,000
(*a*) It is anticipated that the CAA will operate the 3 aircraft under contract to the Weather Bureau at cost of $750 an hour for 400 flying hours in fiscal year 1959	$300,000	
(*b*) Electronic engineers flying with the aircraft to maintain the meteorological instruments and research recording systems will need to be provided by the Weather Bureau. Due to increased research flights provision is also made for additional research meteorologists to serve as flight-planning specialists, 15 positions	70,100	
(*c*) Augmentation of research effort by placing additional research contracts with universities to keep pace with data collection	50,000	
(*d*) Miscellaneous expenses including travel, utilities supplies, equipment, etc	32,900	
2. Additional weather observations from ships at sea and the automatic ocean reporting station		126,600
(*a*) Communication costs connected with receipt of 36,000 additional ocean weather reports (200 a day times 180 days)	50,000	
(*b*) Maintenance of automatic weather station in Gulf of Mexico	20,000	
(*c*) Development of improved wind measuring equipment for shipboard use	25,000	
(*d*) 2 research meteorologist to assist in collection of ship weather reports	11,300	
(*e*) Other expenses, including travel, utilities, supplies, equipment, etc	20,300	
3. Studies of coastal flooding to develop forecasting procedures for more precise warnings of hurricane tides and coastal sea floods		100,400
(*a*) 3 research meteorologists and 2 assistants to develop coastal sea flood warning procedure	27,800	
(*b*) Contracts with universities to study and determine the factors causing coastal inundations during hurricanes	30,000	
(*c*) Equipment to permit receipt of tide height reports from remote locations	20,000	
(*d*) Other expenses associated with above research program	22,600	
Total research requirements under "Salaries and expenses appropriation		680,000

Radar weather warnings

Each of the powerful new WSR–57-type long-range radars being installed by the Weather Bureau in fiscal year 1959 will be capable of observing severe weather over an area of approximately 275,000 square miles. Somewhere within this area, equal to the State of Texas in size, weather echoes can be expected to occur on the radar scope more than 50 percent of the time, day and night, 7 days a week. For this facility to be used effectively a trained radar-meteorologist must be available to watch the scope at all times. Without staff for this purpose the radar cannot be utilized properly for the detection of severe storms which endanger life and property.

The sites selected for the new radars are key locations in the hurricane and tornado belts and were selected after careful evaluation to determine where they would be most useful for issuing storm warnings. This item provides a radar-meteorologist on duty at all times around the clock at each station where radar will be placed in operation during fiscal year 1959. The table on the following page shows the computation of requirements for this purpose.

Major requirements for operating staff for long-range weather search radars are:

1. 75 radar meteorologists (average number to be employed during fiscal year 1959 is 14.3) for duty at the 15 stations where the new radars will be in operation during fiscal year 1959	$92,200
2. Travel and transportation to move personnel to new duty stations and for training assignments	46,200
3. Training contract with a university in principles of radar operation	10,500
4. Other expenses such as supplies and equipment	11,100
Total radar operators cost under Salaries and Expenses Appropriation	160,000

(H. Doc. 394)

Establishment of meteorological facilities

Request	$1,300,000
Budget estimate	$275,000
Employment:	
Average number, current appropriation	21
Number involved, this estimate	--
Actual employment, May 31, 1958	25

Purpose and need for supplemental funds

	Positions	Average number	Personal services	Other objects	Total
Hurricane and tornado research equipment: Hurricane research				$1,300,000	$1,300,000

The aircraft now on loan from the Air Force for the Hurricane project are not suitable for civilian maintenance and operation. Therefore, it will be necessary to completely equip three new planes with meteorological recording instruments prior to the 1959 hurricane season. This work will be done following the close of the 1958 hurricane season on November 1 and prior to the beginning of the 1959 season in June 1959.

GENERAL STATEMENT

Mr. PRESTON. Doctor, we shall discuss both items at the same time. You can take up the first one first, but we will discuss the other one, too.

The general questions will be on both items at the same time.

Mr. REICHELDERFER. Thank you, Mr. Chairman.

The Weather Bureau's request comprises these two items, "Hurricane research" and "Radar weather warnings." The first item pertains to continuation of the national hurricane research project.

This important project has been in progress for 3 years. It aims to discover the conditions that give rise to hurricanes, how they develop, how they move, particularly the conditions that cause their erratic movements and so on.

This problem is summarized in the justification.

OPERATION OF AIRCRAFT

The estimates would provide for operation of three aircraft to be given to the Weather Bureau under bailment; that is, under contract.

Mr. PRESTON. By whom?

Mr. REICHELDERFER. By the Air Force.

Mr. PRESTON. And operated by you?

Mr. REICHELDERFER. Operated by the Weather Bureau.

Mr. PRESTON. Your own pilots?

Mr. REICHELDERFER. We would contract for operation, probably with the CAA. The amount of $680,000 includes the cost of operation estimated at $750 an hour for 400 flying hours during the fiscal year. This estimate of cost was arrived at by consultation with the CAA and with some of the private commercial companies. It represents an average figure—neither a maximum nor a minimum.

SALARIES OF ELECTRONIC ENGINEERS

The $680,000 also covers salaries for electronic engineers that keep the meteorological data equipment in the planes in operation. Some of these engineers—6 or 7 of them—would fly in the planes right into the centers of hurricanes, to get data on the wind circulation, the energy budget of the hurricane, the forces, including the latent heat of condensation of moisture, the formation of clouds, and how these enter into the increase in intensity of the storm.

One of the important things in giving accurate forecasts of hurricanes is the wind field aloft.

PROGRESS OF HURRICANE RESEARCH

The summary justification does not include an indication of how this project has progressed during the last 2 years.

You will recall that 1956 and 1957 did not have as many hurricanes as we normally have. Therefore, the amount of data collected in the 2 years has been less than we had reason to expect. Even so, this chart here shows that progress has been made.

Shown here in the lower right-hand corner of the chart we have the actual course of the hurricane in black and the predictions as best we could make them with the data available without research results.

The actual position on the 8th of September was here [indicating] and the forecast position was here [indicating].

On the 11th the actual position was here and the forecast here [indicating].

On the 13th the actual position was here [indicating] and the forecast for the next 24 hours was up here [indicating].

The hurricane then took a different path which indicates some of the unknowns that we are trying to determine. There are perfectly definite physical causes of the behavior of hurricanes. Once we find them, we will be better able to foretell what happens.

We did not get enough data during the early part of this storm to apply research techniques, but for this situation here on the 17th and the 18th we had enough data to develop this new forecast position. The forecast by the old method was shown up here on the 18th and the actual position was here [indicating].

The forecast, based on the results of research, was at the green dot, which shows considerable improvement. That is, the first forecast position was 300 miles from the actual, whereas the research "forecast" position was 70 miles, an improvement of much significance in public safety.

Mr. PRESTON. Why could you not have had the same data earlier than you had later in the course of the hurricane, with all of your existing techniques and devices?

Mr. REICHELDERFER. Actually, the facilities to carry on collection of data to show the causes of hurricanes are meager in a comparison of the size of hurricane. The planes sometimes cannot reach the position of the hurricane far at sea, and sometimes the instruments give difficulty, the recording instruments. So the fact was, try as hard as they could—and the pilots and research teams certainly put everything they had into it—they were not able to get all of the data needed to develop new forecasting techniques.

This shows very clearly how important the research data are. We estimate that up to the present time we have only about one-third as much data as we should have in order to complete the present research project.

DEVICES LACKING

Mr. PRESTON. What devices are you lacking that would give you 100 percent information?

Mr. REICHELDERFER. One is the latest navigation equipment to give the winds at flight altitudes. At present winds have to be reckoned from successive positions of the aircraft. There is now on the market a navigation device that gives the actual winds at the location of the aircraft at all times.

Mr. PRESTON. You did not have this previously?

Mr. REICHELDERFER. No.

Mr. PRESTON. Why not?

Mr. REICHELDERFER. It had not been developed. It is just coming on the market now.

Mr. PRESTON. Just developed. It is something you have not requested of Congress?

Mr. REICHELDERFER. That is correct, yes.

There has been other equipment and we did contemplate this device in the original plan. We have not been able to purchase it because we did not have quite enough money. The cost of these things has been going up.

Mr. PRESTON. Doctor, you put the burden on us at this point.

DISCUSSION OF AVAILABILITY OF FUNDS FOR PURCHASE OF DEVICES

Have you ever specifically asked this committee for funds to purchase these devices that you are speaking of now?

Mr. REICHELDERFER. We have asked for funds in larger amounts for instrumentation of the hurricane project.

Mr. PRESTON. Have we not given you phenomenal increases in the last 4 years?

Mr. REICHELDERFER. Yes, Mr. Chairman, large increases.

Mr. PRESTON. Have we denied you funds to purchase this particular equipment that you specifically asked for?

Mr. REICHELDERFER. The allowance has not been all that we asked for.

Mr. PRESTON. Have we denied the funds to purchase these devices that you refer to now?

Mr. REICHELDERFER. In effect, yes.

Mr. PRESTON. Have you ever specifically said to this committee—Doctor, I want you to be completely factual and honest about this because I think that you are putting us in a light that we do not deserve to be put in—have you ever specifically said to this committee, "These devices are available and we need X number of dollars to buy them," and we said, "Doctor, we are going to deny you the funds."?

Mr. REICHELDERFER. Not in specific terms.

Mr. PRESTON. Have you ever sat across this table and asked us specifically for funds to purchase these devices?

Mr. REICHELDERFER. The devices as such were not available when we made our estimates.

Mr. PRESTON. Very well. You never asked us then for the funds to purchase these devices, have you?

Mr. REICHELDERFER. Not specifically, the automatic navigator had not yet been put on the market.

Mr. PRESTON. Doctor, I think that at this point it is a good time for us to get into the question of policy as far as the operation of your agency is concerned, because you are undertaking to interject in this testimony an impression that is not completely fair to the Congress.

I am beginning to wonder just what emphasis you are placing in your agency on general weather reporting and whether or not you are placing greater emphasis on this business of hurricane forecasting and storm warning vis-a-vis the general weather information that the farmer needs and the aviator needs?

In recent years we have given you terrific increases.

Let the record show what happened to you in the last 8 years.

INCREASES IN APPROPRIATIONS SINCE 1950

We will insert in the record at this point the chart on page 124 of the committee print for fiscal year 1959.

In 1950, you requested, or the Bureau of the Budget requested, $24,187,000. We cut you the paltry sum of $100,000 and we gave you a supplemental request of $355,000, which was a reduction below your request of only $20,000.

In 1951, you requested $26,100,000 and the Congress cut that down to $24,897,000.

In 1953, you had a supplemental that year of $1,470,000, which was the exact amount you requested.

In 1953, you requested $28 million and Congress gave you $27,244,000.

In 1955, you got exactly the budget request of $24,750,000.

In 1956, the Congress increased your request over the figure of $30,850,000 to the point of $34,150,000.

In 1957, you got within $100,000 of the exact budget request of $35,500,000.

In 1958, your request was $39,300,000 and we allowed, including the supplemental, $37,900,000, which was a little above a million dollar reduction.

For fiscal year 1959, the coming year, the budget recommendation was $40 million and the committee allowed $39 million.

Since 1950, you have grown from $24,179,000 to $39 million.

It appears that while you have gotten this astronomical increase the actual service that you are rendering has been reduced in certain areas. The chart that I have just read into the record does not reflect that in 1956 the committee allowed $7,500,000 above the figure that I read of $34,150,000, which brought your total up to $41,650,000.

Actually, we have been increasing the appropriation for the Weather Bureau at a rate much greater than the average agency of the Government. We now find, in examining the record, for instance in the matter of weather reporting, that the following situation exists:

REDUCTION IN WEATHER REPORTING STATIONS

In 1948, with an appropriation of $21,327,000 you had 400 weather reporting stations and 4,484 full-time Weather Bureau employees. I am talking now about aviation weather reporting.

At that time we had 209,521 instrument approaches on American airports and 10 years later contrasted with the $21 million, you had $23 million for operations. That is not the total appropriation that I am speaking of but only weather operations.

You only operated 314 stations as contrasted with 448 10 years earlier; you had fewer employees; you had 4,217 full-time employees and the number of instrument approaches had increased from 209,521 to 1,342,930 in 1958.

Obviously, there has been a shift in emphasis in the Weather Bureau. You are using your funds in a new area rather than in the area that many of us think is so essential and absolutely vital to aviation safety.

I am wondering why this has not been brought about.

Could you give us an explanation?

Mr. REICHELDERFER. Mr. Chairman, we have certainly been concerned about this trend in fewer stations and smaller staffs. We have emphasized the critical situation represented in the reduction of stations and personnel. Of course, some of the increases in cost have been absorbed by increased salaries, but there have been other major developments of a technological character that have increased the costs. The radar program is entirely new.

Mr. PRESTON. Doctor, let us go back to this matter of reduction in number of stations.

Why have you reduced the number of stations with aviation increasing and growing as it is? Why have you reduced the number of stations?

Mr. REICHELDERFER. Because our appropriation provided for certain facilities and services which left relatively less to pay for stations and staff.

Mr. PRESTON. Yes; but that is based on your request. It is not based on what we have done but on what you requested.

Mr. REICHELDERFER. Mr. Chairman, the big research increase after the hurricanes of 1954 was a specific instruction from Congress that we go into studies for improvement of the hurricane warnings.

Mr. PRESTON. At no time did Congress ever suggest to you by official action, or any action that we took, that you should reduce the number of weather reporting stations for aviation purposes.

Mr. REICHELDERFER. That is quite right, sir. The money that we had left for carrying on the network establishment would not continue to support the same number of stations and we had no choice in the funds appropriated for research and certain other purposes. We had to maintain our basic forecasting services to the public. We had additional funds required for the numerical weather prediction method, which has improved the accuracy of the forecasts. So, what this amounts to is that after we had alloted funds to those services, which, as we understood the intent of the Congress and the administration, those were the primary services to the general public.

By that I mean the storm warnings and the forecasts for the public. We did not have sufficient funds remaining to continue all of the previous field reporting stations.

Mr. PRESTON. I want to ask you a very direct question and I want you to give me a categoric answer as to whether it is correct or not.

DEPENDENCE UPON OTHER WEATHER REPORTING STATIONS

Is it true that there are 921 weather stations from which reports are gathered and that the Weather Bureau operates only 314 of the 921 and that the CAA operates 231 and the airlines operate 263 of this total figure? Is that correct?

Mr. REICHELDERFER. This is approximately correct, yes, for those three categories but we receive weather data from many other cooperating stations.

Mr. PRESTON. It is an amazing thing to me, as one member of this committee, that out of the total appropriations we provide for the Weather Bureau, you actually represent only about a third of the weather-reporting stations in the country.

Mr. REICHELDERFER. Mr. Chairman, our forecasts are based on maps drawn from reports that come from all over the hemisphere. The comparison that you are giving could be made, or could be highlighted even more if you wish to point out that the extended forecasts for farmers, for the public, and for international air commerce are based upon reports from stations all over the hemisphere of which we operate less than 10 percent. We have to use reports from Canada, Europe, and so on.

I bring this in because no national meteorological service in any country can afford to maintain sufficient stations to operate completely within itself as a self-contained organization.

It has to get reports from its merchant marine ships at sea, its coast guard, from its aeronautical agency, and from other cooperating agencies.

As for the 263 stations operated by the airlines, we have felt that the Weather Bureau should be complimented for having found this way to extend the observation service so far without cost to the Government. We have done it to obtain the necessary weather-watch coverage without requiring more money for regular stations.

Because the reports are needed from these places, and yet there is not enough traffic at some of these airports where reports come from the

airlines to really compare with the stations where we maintain full-time——

Mr. Preston. There are certain basic services that the Government is supposed to provide for the people of the Nation, such as the post office, the weather service, the protection afforded by the Justice Department, and certain basic, fundamental things.

They include certain things that the Agriculture Department performs. Many of the services of the Government are desirable or of a questionable nature, but the weather service is very essential and very fundamental.

To try to shift this burden off to the airlines and to the CAA and other agencies of the Government, to my mind is not in accordance with the intention of Congress. It does not coincide with the general philosophy of the people who have to deal with the policy of the Weather Bureau, those of us who provide the appropriations, and we think that the service ought to be given to the public as a service for which they pay their taxes into the Treasury Department.

Let us go back to the original question.

SHIFTING OF EMPHASIS FROM GENERAL WEATHER REPORTING

Has there been a general shifting of emphasis in your Bureau from the reporting service to the public in favor of research and storm warnings and hurricane warnings?

Mr. Reichelderfer. There has been no shift in emphasis, no, sir, not as regards importance of the basic network. The forecasting service to the public, general forecasting service, includes storm warnings. We have always felt that safety of life, reports and warnings pertaining to safety of life, should be our first consideration. That applies to aviation as well as to storm warnings for the general public.

We have not shifted the emphasis. The forecasts and warnings we give now are essentially the same as we have always given. We are trying to improve accuracy. One method of improving the accuracy was to make use of the electronic computer to digest the mass of data that comes from these reporting stations, to compute the prognostic chart mechanically or electronically, and come out with a better objective forecast. This is what we have done. This is costing more money. The same forecasting services we gave before cost more money now than they did a few years ago.

We have not deemphasized the reporting network. We have tried to find more economical ways of carrying it on.

We pointed out in our testimony on our regular 1959 estimates that we were very much concerned, we were alarmed about the decrease in stations maintained by the Weather Bureau, in our ability to man those stations 24 hours a day. This was pointed out not only in the testimony but we wrote your committee a letter last August, pointing out the difficulties in which we found ourselves.

Mr. Preston. You say you have done this. You have tried to shift the burden to the Congress when the Congress has been steadily increasing your appropriations and you as the Administrator have shifted the emphasis of the weather service the Weather Bureau performs. Certainly you have had a higher percentage of increase in

appropriations than almost any other Government agency, much more than even the Defense Department percentagewise, even greater certainly than any number of agencies we can mention in the Commerce Department. But you mention these things to the Congress because they are the things that are closest to us, that Members of Congress complain to this subcommittee about, because you eliminate service, for instance, at the Detroit airport where you closed one weather reporting station and transferred their function to another. I believe you closed the Wayne——

Mr. REICHELDERFER. The Detroit City airport office.

Mr. PRESTON. You transferred it to another——

Mr. REICHELDEFER. The city airport. Not the city office but the city airport.

Mr. PRESTON. To another airfield. We cannot understand why you do these things in view of the large increases we have given you. Take Florence, S. C. I asked you about this when you were here before the committee justifying the 1959 bill. You said you could not put an additional man on there to give the service that Florence, S. C., needed, because of budgetary limitations. Yet you have had more money every year, we have been increasing you for the last 4 years, we have jumped you up something terrific. Yet you say you cannot handle one little job we ask you about.

HIGH ALTITUDE WEATHER INFORMATION FOR JET AIRCRAFT OVER THE NORTH ATLANTIC

As an illustration of what I am talking about, I understand—if I am incorrect I hope you gentlemen will correct me—I understand you have made no plans whatsoever to provide weather information over the North Atlantic for jet aircraft that will be flying above 20,000 feet. Those aircraft will be operational this fall. You have made no plan whatsoever to provide this information although you have facilities in New York, you have reporting facilities that I think could provide this information and you put it on a budgetary proposition, you tell the airlines that you cannot do it because of budgetary restrictions.

Why have you not made some plans? Why have you not brought this to our attention? If you need more money to give weather reporting information on weather conditions above 20,000 feet for jet operations, why have you not told us about it?

Mr. REICHELDERFER. I am forced to say we made a very strong point of this very service in our estimate for 1958. We pointed out the jet aircraft requirement was upon us, that we would have to put on specialists who could study how to forecast the winds and conditions above 20,000 feet. We emphasized as strongly as I know how that this action should be taken right away.

Mr. PRESTON. That is for fiscal 1958.

Mr. REICHELDERFER. Yes, sir.

Mr. PRESTON. We will check the record. If you are correct, I will concede it.

Mr. REICHELDERFER. We show charts.

Mr. PRESTON. How much money did you request for this purpose that the committee did not allow?

Mr. REICHELDERFER. The total for aviation was $1,022,000, requested in our regular 1958 estimates.

Mr. PRESTON. I am talking about the North Atlantic weather reporting, not general aviation.

Mr. REICHELDERFER. $262,000.

Mr. PRESTON. That is what you requested?

Mr. REICHELDERFER. Yes, sir.

Mr. PRESTON. How much was allowed?

Mr. REICHELDERFER. Nothing was allowed on that item, Mr. Chairman.

Mr. PRESTON. Did you decide not to allow it or did the committee specifically make reference to it?

Mr. REICHELDERFER. There was no increase in the allowance for aviation that year by the Congress.

Mr. PRESTON. Doctor, I doubt the accuracy of that statement.

Mr. FLOOD. What year?

Mr. REICHELDERFER. Last year, sir; fiscal 1958.

Mr. PRESTON. You said there was no money allowed for aviation. You are talking about an increase?

Mr. REICHELDERFER. Yes, sir.

Mr. PRESTON. Suppose you point out to the committee your testimony in support of this amount for high-altitude jet weather forecasting over the North Atlantic. Since you made the statement, I think you should support it with your own proof.

Mr. FLOOD. They asked for it this year. Regardless of what happened last year, did you ask for it this year?

Mr. REICHELDERFER. It is not in our estimate.

Mr. FLOOD. If it was important last year and you did not get it, why is it not 10 times more important this year, all things being equal?

Mr. REICHELDERFER. We think it is.

Mr. FLOOD. Why did you not ask for it? Is it any less true this year than it was last year? On the contrary, is it not 10 times more important this year than last year, or at least twice as important, or at least as important?

Mr. REICHELDERFER. It is more important.

Mr. FLOOD. Why did you not ask for it?

Mr. REICHELDERFER. Congressman Flood, I am sure the committee must know that the Weather Bureau, like other agencies, has advance plans that carry a larger dollar figure than——

Mr. FLOOD. Doctor, the question is very simple. There is no need to present an apologia. If you asked for this last year and you say you did not get it, the record will show who is right or wrong, why did you not ask this year, since you say it will be more important this year? Just tell me why you did not.

Mr. REICHELDERFER. We asked for this item you referred to along with other items.

Mr. FLOOD. You asked whom for it?

Mr. REICHELDERFER. When it came to the determination of priorities.

Mr. FLOOD. By whom?

Mr. REICHELDERFER. Along the line before it gets to Congress.

Mr. FLOOD. Whom did you ask for it? Here is your shop. What did you ask for and whom did you ask for the purpose that Mr. Preston is talking about? You say you asked for so many dollars last year and you did not get it from the Congress. All right. I do not know if you did or not. Mr. Preston will establish that. I am not talking about that. Did you ask for it this year, I say to you and, if you did, how much did you ask for and who was the first person you asked for it and where was the first step in the chain of command you were refused?

Mr. REICHELDERFER. This item you refer to was included in our original estimate.

Mr. FLOOD. By ours, you mean the Bureau?

Mr. REICHELDERFER. Yes, sir.

Mr. FLOOD. Your original estimate to whom?

Mr. REICHELDERFER. To the Department of Commerce.

Mr. FLOOD. You presented to the Department of Commerce this year a request for how much for the purpose Mr. Preston is speaking of?

Mr. REICHELDERFER. The total increase for aviation——

Mr. GLEITER. May I give the figure?

Mr. FLOOD. Give me the total figure for aviation and then the specific reference to Mr. Preston's question.

Mr. GLEITER. The total request to the Department was 358 positions and $2,762,000 as an increase in 1959 for aviation weather service improvements.

Mr. FLOOD. Is that what Mr. Preston is talking about?

Mr. GLEITER. The total was made up of five separate items.

Mr. FLOOD. Let us have Mr. Preston's item.

Mr. GLEITER. We will give you the North Atlantic high altitude forecasts.

Mr. FLOOD. Is that what he is talking about?

Mr. GLEITER. Yes, sir; 96 positions and $818,000.

Mr. FLOOD. You have asked the Secretary of Commerce for that?

Mr. GLEITER. Yes, sir.

Mr. FLOOD. Did you get it?

Mr. GLEITER. Yes, he supported us very favorably for 96 positions with a slight reduction in some other expenses. We asked the Bureau of the Budget for $705,500.

Mr. FLOOD. What happened at the Bureau of the Budget?

Mr. GLEITER. This item was deleted.

Mr. FLOOD. That is all, Mr. Chairman.

Mr. PRESTON. So the Bureau of the Budget knocked it out. So, as a matter of fact, the criticism is not properly lodged against you but against the Bureau of the Budget; is that right?

Mr. REICHELDERFER. It is not criticism. These were all considered very carefully by the Bureau of the Budget and in the matter of priorities——

Mr. PRESTON. So, as a matter of fact, Doctor, the subcommittee before whom you are appearing now did not deny it; it was never presented to us.

Mr. REICHELDERFER. This year, this is correct.

Mr. FLOOD. By the way, I am making it a criticism for the record. I am criticizing the Bureau of the Budget severely for deleting this item requested by you, approved by the Secretary of Commerce, and deleted by the Bureau of the Budget. I am making my criticism at this point vehement.

APPROPRIATION FOR INTERNATIONAL WEATHER FLIGHTS FOR 1958

Mr. PRESTON. The paper you just handed me which is a page from the Congressional Record 1957, page 4809, has remarks made by the chairman of this committee on the floor of the House, as follows:

> We took $1,022,000 out of the aviation weather service. This was a new program the Weather Bureau sought to inaugurate to create new stations along the Federal airways to transmit Weather Bureau information to pilots at given intervals. We took the position that the weather services they are getting now are adequate, and that it would be a real luxury to have additional weather stations spotted along the Federal airways to radio weather information to the pilots. We took that out.

The testimony you gave this committee at that time I remember very well. What you asked for was not for weather stations at the airports but was for intermediate reporting stations between airports in order that the pilots might have weather all along the route, intermediate weather reporting. Is that true?

Mr. REICHELDERFER. No, it was not quite this way.

Mr. PRESTON. Shall I get the testimony you gave before the committee and refresh your memory?

Mr. REICHELDERFER. Certainly, if I am wrong.

Mr. PRESTON. What did you testify about this intermediate weather reporting?

Mr. REICHELDERFER. The item you refer to, the $1,022,000, included the flash advisory service which I believe you referred to specifically, but it also included weather observational stations and services for international flights, which as I understand it are the deficiencies that are being criticized at the moment.

Mr. PRESTON. You mean an increase in the appropriation for international flights.

Mr. REICHELDERFER. That is right.

Mr. PRESTON. Not the international weather reporting per se but the increase you sought for international flights.

Mr. REICHELDERFER. Yes, sir.

Mr. PRESTON. How much increase did you seek this year for international flights?

Mr. REICHELDERFER. You mean 1958?

Mr. PRESTON. 1958.

Mr. REICHELDERFER. For the first year of operation, that would have been for the fiscal year that closes June 30, next week, a total of $262,600.

AVAILABILITY OF FUNDS FOR HIGH-ALTITUDE REPORTING

Mr. PRESTON. Despite the fact that you have an existing organization to give international weather on international flights, you have refused to plan or to give weather for flights above 20,000 feet for this fall, have you not?

Mr. REICHELDERFER. Mr. Chairman, it is not a case of refusal. We have reviewed this time and again to see if there was not some way for us to do it. The staff we request for this purpose is only a fraction of the staff that Canada and the United Kingdom feel necessary for their services to provide high altitude forecasts, per station. Our estimates on the personnel required and other facilities were really quite conservative.

Mr. PRESTON. You have existing facilities to provide the service now if you saw fit to impose this responsibility on them.

Mr. REICHELDERFER. I wish that were true, sir, but they cannot.

Mr. PRESTON. Why can they not? The information could be made available if you simply told them to provide it. You have the reporting facilities. You have the stations existing. Why can you not give the weather above 20,000 feet as well as you can give it below 20,000?

Mr. REICHELDERFER. They are asking for forecasts and the higher-altitude reports have to be plotted and analyzed to provide adequate foreccasts.

Mr. PRESTON. Doctor, I am not a weatherman by any means, but I know enough about it to know that the prevailing weather flows from west to east across the North American Continent and toward Europe; does it not?

Mr. REICHELDERFER. Prevailing, yes; but not all the time by any means.

Mr. PRESTON. But the majority of the time?

Mr. REICHELDERFER. Yes, sir.

Mr. PRESTON. So it is not a complex question. You have a certain amount of standard type of weather that exists. You understand the normal behavior of the weather. The prevailing wind blows toward Europe from the North American Continent.

If you can provide the forecasting below 20,000 feet, why can you not provide it above 20,000 feet?

Mr. REICHELDERFER. Because the winds above 20,000 feet are often quite different.

Mr. PRESTON. You have the same facilities you use for below 20,000 that you can use above 20,000.

Mr. REICHELDERFER. It takes a separate analysis; it takes special studies to do the job. The winds vary at that altitude all the way up and on successive days they may vary from north or northwest through southwest to south and velocities may vary from 10 or 15 miles an hour to 100 or 150 or 200 miles per hour in extreme cases.

These cases are not easy to analyze and forecast. They are not simple. In order to give satisfactory service and accurate forecasts, it requires specialists who study these data for the purpose of forecasting above 20,000 feet. I can assure you, Mr. Chairman, this is not a case of a capability that——

Mr. FLOOD. Will the gentleman yield?

Mr. PRESTON. Yes.

Mr. FLOOD. But there is no request in for it. The Bureau of the Budget knocked it out. If everything you say is true, you have no request before us to do these essential things you say you must have. Are you permitted to ask for them this afternoon? I do not want the same thing to happen to you that is happening in the Department of Defense to Admiral Burke but you are out of uniform—if you are a

Reserve admiral you better be careful—but if you are in the clear and since your Secretary supported you and, while I know you almost take off your hat when you pass the Bureau of the Budget and I do not want you to get in trouble, if you will not ask for it, I will. Do you want to ask for it or do I ask for it?

Mr. REICHELDERFER. We are on record as being concerned at the fact that we do not have facilities to forecast above 20,000 feet. In that respect, the committee has before it the fact that——

Mr. FLOOD. You understand that Mr. Preston in examining you made it very clear he is no weather man. His purpose in examining you is not to oppose you but to make a record to find out the facts. In answering this, you have convinced me this is an absolutely essential condition precedent; is that right?

Mr. REICHELDERFER. This is my view.

Mr. FLOOD. And the Bureau of the Budget knew or should know those facts from you, just as I have; is that correct? They should, anyhow.

Mr. REICHELDERFER. That is right.

DEPARTMENTAL ESTIMATES FOR IMPROVEMENTS IN AVIATION WEATHER SERVICES, 1959

Mr. FLOOD. They cut this out. Now, if those are the facts and if your position is reaffirmed before us today in reply to Mr. Preston's examination on this point and there is no request for funds here and it is a condition essentially necessary precedent to proper operations, especially since we are faced with the introduction of jet commercial aircraft in November of this year, in the middle of the 1959 fiscal period, do you ask for the funds? If you do, how many people and how much money necessarily operational must you have in the next fiscal year? Do you have it here?

Mr. REICHELDERFER. We have the estimates we prepared for fiscal year 1959. We have those.

Mr. FLOOD. Will you submit them? I am asking you to.

Mr. REICHELDERFER. We can provide those for the record; yes, sir.

Mr. FLOOD. All right.

(The estimates referred to follow:)

Request to Bureau of the Budget for fiscal year 1959 for improvements in aviation weather services

Program item	Positions	Average employment	Total cost
1. High altitude forecasting for jet-age operations	96	56.0	$705,500
2. Engineering studies for jet-age meteorology	95	64.9	520,000
3. New aviation weather stations	24	29.6	415,500
4. Continuous weather warning broadcasts for pilots	131	98.0	751,500
5. Logistics support for weather services in Pacific area			65,000
Total	346	248.5	2,457,500

Mr. Bow. Will you yield a moment?

Mr. PRESTON. Yes.

Mr. Bow. It might be well to ask the doctor if it is not true that in a meeting in Paris in 1950 we agreed in an international agreement to provide these services.

Dr. REICHELDERFER. This is quite true.

Mr. BOW. It may be embarrassing to us if we do not do it because of our international commitments; is that right?

Dr. REICHELDERFER. This is quite right. We have pointed this out, yes.

Mr. BOW. That is all.

PREVIOUS TESTIMONY REGARDING WEATHER REPORTING FOR JET AIRCRAFT

Mr. PRESTON. I would like to call your attention to page 498 of the hearings of 1958 about the middle of the page. The colloquy between the chairman and yourself involved this jet aviation business. You said:

> This becomes important with the increase in air travel and the use of jet aircraft, where the timing is so much more critical. A jet aircraft cannot go upstairs and wait around for 2 or 3 hours, as sometimes happens with conventional aircraft when they are stacked up over airports awaiting a chance to land in thick weather. Timing and positive information are critical with higher speed aircraft.
>
> Mr. PRESTON. Well, there is no doubt about that, and no one here would argue with you about that.
>
> Dr. REICHELDERFER. So, this is a new problem.
>
> Mr. PRESTON. You mean jets are a new problem.
>
> Dr. REICHELDERFER. The weather services for jets is a new problem, yes. A little later on in our estimates we will be coming to the weather conditions at the terminals for jet aircraft operation.

Back to the question raised in the paper you presented to the chairman from the Congressional Record, do you recall, Doctor, that you specifically requested funds in aviation weather reporting for additional observation stations between airports where you said the reports would be given to the pilot; while he might get one report at an airfield in transit to another airfield, he could be given weather between the airfields, between the various communication stations, that he would be contacting and getting weather reports from? And that you specifically asked for funds for that purpose to create new reporting services between communication stations?

Dr. REICHELDERFER. Apparently my testimony does not speak specifically to the point of new stations, new network stations. The item, the comments you are referring to refer directly to the new flash advisory weather service we wanted to put in.

REASON FOR REDUCED ALLOTMENT FOR STATIONS

Mr. PRESTON. Will you complete your answer to the question?

Dr. REICHELDERFER. The decrease in stations and the decrease in number of personnel has come about during the last year or two primarily because the items that we were under obligation to carry out have taken a large proportion of our appropriation and since we did not have enough money to cover the obligations, the research and storm warning service, about which I will give details in a moment, plus the basic network of stations, the only place that we could keep within the budget, the appropriation, was to cut stations.

UTILIZATION OF INCREASES SINCE 1955

Earlier we spoke about the large increases percentagewise that the Weather Bureau has had. I would like to give a little breakdown on the items making up that increase. During the period since 1955, $4.4 million went to mandatory legislative increases, salary increases, fringe benefits, retirement fund, and insurance contribution. This, which might at first glance be charged against us for Weather Bureau operations, was completely absorbed by mandatory legislative increases.

Another large item is $2.6 million that went to cover the cost of services formerly carried on by the military that had become civilian services and were therefore transferred from the Department of Defense to the Weather Bureau. This meant no increase in establishment insofar as meteorological facilities were concerned, but only that the funding was transferred from the military to the Weather Bureau. This has actually cost us more because the rising costs that we could not anticipate make the total more than the $2,600,000 that we got for it. So that we have had to take that out of the Bureau's hide. We had to take that from wherever we could find it. The only place we could find it was to curtail stations.

Also, of the large increases $2,400,000 were earmarked by Congress for severe storm research projects. This is one reason we are doing more research. We are very much in favor of this. The research is the seed corn that gives us a better crop of forecasts in the future. You saw that in the maps I showed with reference to hurricane forecasts.

All of these research projects are directed toward improvements in forecasts, in storm warnings, for the protection of life and property.

Continuing the items that make up the increase in Weather Bureau appropriations since 1955, there was appropriated for severe storm weather service improvements—that was for the forecasting aspects of severe storm warnings distinguished from the research aspects I have just mentioned—for the service improvements there was $3.5 million. The remainder is made up of operations and maintenance of new facilities procured under the Establishment funds. That is the new ceilometers and equipment of that kind to get better measurements for aviation, et cetera, that was $1.5 million.

So our increases were marked for specific items which we regard of very high priority and which the Congress specified and the picture is not complete until we recall that rising costs have made these obligations require greater expenditures than we anticipated.

Mr. PRESTON. Doctor, I will make this observation before we adjourn this afternoon. The committee would like to know from you what amount of money would be required to reasonably give adequate weather reporting over and above any request that may be pending before the committee.

On next Tuesday, if you will, please, give us that information, not on the basis of satisfying everybody, but what would be reasonably adequate. We would like to have that figure so the committee can consider it.

Dr. REICHELDERFER. Yes, sir.

Mr. PRESTON. We are not speaking necessarily in terms of the "Design for a Modern National Aviation Weather System" which you

have prepared and submitted to the committee, which is a long-range plan, I believe.

Dr. REICHELDERFER. It is. The long-range plan has not yet been released.

Mr. PRESTON. I am thinking in terms of adequate weather reporting and forecasting for aviation purposes today. We are thinking in terms of providing the type of service that any reasonably active airport should have, to eliminate the bottlenecks brought about by telephoning from one place to another with a single line system where the line is always busy, whereby pilots cannot get weather information and sometimes take off without having real good forecasting on the weather report. We understand that quite often the pilots who are not able to get the weather from the weather station because of a busy line or congested telephone traffic take off without having proper weather information, though it might be available if he could get through to the station.

Dr. REICHELDERFER. Unfortunately, this is true. We are trying to take care of that by these radio range broadcasts that have continuous advices for pilots.

Mr. PRESTON. Do not misconstrue the invitation.

Mr. REICHELDERFER. We will try to give you just what you have asked for.

Mr. BOW. You also have in mind, have you not, the upper currents?

Mr. PRESTON. We would like to have an estimate of what it would take to provide North Atlantic high altitude weather for the jet aircraft operational this fall.

Mr. REICHELDERFER. Yes, sir; together with the 24-hour service.

Mr. PRESTON. Yes, what you think is needed in the weather reporting system.

You might also be prepared to discuss with us the list of weather stations from a priority standpoint. Tell us how many of those you think should be put into operation, how many people it will take to operate them, and the cost.

Mr. REICHELDERFER. Yes, sir. Mr. Chairman, with reference to the pamphlet you just mentioned, I should point out this has no figures attached to it. This is a guide that has been prepared in consultation with the Civil Aeronautics Administration, the Air Coordinating Committee, and others so that we have something to guide us in general plans. There are no figures attached. This does not have budgetary implications at the moment.

Mr. PRESTON. We are glad to have it as information. I have not had a chance to read it yet, but I will. Thank you, gentlemen.

TUESDAY, JULY 1, 1958.

Mr. PRESTON. The committee will come to order.

When the committee adjourned on Thursday, we were hearing the Weather Bureau appropriations request, and at that time we were discussing the general policy of the Weather Bureau as to where it was placing its emphasis and whether it was doing adequate aviation reporting. We had requested that the Bureau furnish the committee some figures showing what, in their best judgment, was needed to provide adequate weather reporting, and also the high-altitude reporting over the North Atlantic.

I assume that you have those figures this morning, Doctor?
Dr. REICHELDERFER. We have.
Mr. PRESTON. And is this a copy of them which I have here?
Dr. REICHELDERFER. No, sir; they have not been passed out yet.
Mr. PRESTON. Off the record.
(Discussion off the record.)
Mr. PRESTON. You may proceed, Doctor.

UTILIZATION OF INCREASES IN APPROPRIATIONS SINCE 1950

Dr. REICHELDERFER. One of the questions asked by the committee on Thursday was directed to why the Weather Bureau has reduced the number of weather-reporting stations and the number of personnel available for aviation weather reports.

I explained that we had done this only as a last resort, and as the least of the evils that confronted us in the face of rising costs and increasing requirements, particularly for more costly equipment and for other facilities and services that were developing.

We took this step of curtailing the stations and the personnel only after consultations with the primary interests in this field, and it was felt that this was the only course we had.

I have asked our budget officer—our officer in charge of budget and management—over the weekend to make up a list of the principal items representing increased costs which reflect very clearly the fact that we were forced under the circumstances to curtail, and if the committee approves, I think Mr. Gleiter can talk directly to these figures and present the case in a very few moments.

Mr. THOMAS. Summarize it briefly. What are those increased items of cost?

Mr. GLEITER. Mr. Thomas, on the front page of this summary we have the appropriation for 1950, including the supplemental, for a total of $24,534,000, and we took this level of employment—personnel and stations and program—and projected that to 1959 cost levels, and came out with an increased cost of $9,612,000.

The details on that summary are given on pages 2 and 3 of this statement. Then, in addition to that $9,612,000 increase, there were also program increases for new facilities and new programs which the Congress specifically appropriated funds for, and the total for the four new program items is $10,300,000. In addition, there were cost increases which we were not faced with——

Mr. THOMAS. These are new programs at a cost of $10.3 million in addition to the overall cost of $9,612,000 since 1950?

Mr. GLEITER. That is right, sir.

The $9,612,000 is to maintain—we would have needed that much money to have maintained our program and services at the 1950 level which we have not been able to do.

Mr. THOMAS. You are going to come up with a round figure of $20 million now?

Mr. GLEITER. Roughly; yes, sir. In addition, there were certain costs that we did not pay in 1950, as an employing agency; for example, the retirement cost of $1,583,000; social security, employee life insurance, and overseas home leave.

This totals another $1,737,000. So, we would have needed in 1959 an appropriation of $46,183.000 to have maintained our 1950 program and also to have taken on the program increases which Congress specifically appropriated increased funds for.

We have in prospect an appropriation of only $39,318,000 for 1959. So, we have had to absorb and make savings in programs and in personnel amounting to a total of $6,865,000.

Mr. THOMAS. What is your personnel on board now or of any recent date, as compared with the 1950 figure?

Mr. GLEITER. In 1950 we employed 4,373 full-time employees. On May 1 of this year we had 4,166.

Mr. THOMAS. In addition to your new programs—your four new programs?

Mr. GLEITER. The figure as of May 1 includes the people employed in those new programs.

Mr. THOMAS. What are your four new programs?

Mr. GLEITER. The first one, sir, is the takeover, on Weather Bureau funds of certain civilian meteorological functions which previously had been handled by the Department of Defense.

Mr. THOMAS. How many employees are involved there?

Mr. GLEITER. I do not have the exact figure with me, but it is roughly 250.

Mr. THOMAS. What is your next one?

Mr. GLEITER. The next one is severe-storm research, of $2 million. These are increases for research with specific appropriations from the Congress in 1956 and 1957.

Mr. THOMAS. How many people are involved?

Mr. GLEITER. The increase in research over that period from 1956 to 1958 is 99.

Mr. THOMAS. You had the people aboard already, did you not?

Mr. GLEITER. No, sir; we had to employ those people in research in order to do this research work. We were not doing that research in 1955.

Mr. THOMAS. How did it differ from the research you were conducting?

Mr. GLEITER. We were doing general types of research, and not concentrating on the hurricane problem.

Mr. THOMAS. What is your next item? Is that your severe-storm-warning services?

Mr. GLEITER. This is the item of $3.8 million which is largely for improved communications and improved facilities at our stations. Also the employment of people to strengthen the warning program. I do not have a figure there on the personnel.

Mr. THOMAS. Your appropriation jumped from $24.5 million up to $39 million. That was not too bad during that period of time, overall from 1950 through this period you are talking about. It was 50 percent; was it not?

What are you hollering about, then? We would normally expect a little increase in your personnel when your dollars go up 50 percent. Instead of increasing, your personnel goes down 200 out of 4,100. You are not so badly hurt. You have not made a very good case.

Dr. REICHELDERFER. Mr. Chairman, the purpose of this table is to show that in carrying on the research it took positions that had formerly been devoted to airways observations, and in our testimony Thursday we were asked to explain why it had been necessary or why we had decided to reduce the number of stations and the number of personnel.

Mr. THOMAS. What stations have you reduced, and where are they located? How many of them are in the continental United States and how many of them are overseas, or on the high seas, and so forth? Please give us a quick rundown on that.

Dr. REICHELDERFER. We have a list of that. There has been a reduction of 85 stations. In personnel used in observing and reporting weather, there has been a reduction of the order of 200 to 300. I will have to furnish a list of the stations closed, Mr. Chairman.

(The information may be found in the appendix on p. 1214.)

Mr. THOMAS. Does that 85 include some on the high seas?

Dr. REICHELDERFER. It does not. These are just continental United States stations and stations in United States Territories.

Mr. THOMAS. Have you closed any of your observation posts on the high seas?

Dr. REICHELDERFER. Since 1950 the number of ocean weather stations—the vessels used for that purpose—have been reduced; yes, sir.

Mr. THOMAS. How many do you have now, and where are they located?

Dr. REICHELDERFER. There are 4 in the Atlantic now, and at that time I believe we had 6 in the Atlantic.

Mr. THOMAS. In the Atlantic?

Dr. REICHELDERFER. Yes, sir.

Mr. THOMAS. And how many in the Pacific?

Dr. REICHELDERFER. Two in the Pacific now. I should make it clear that these stations, of course, are operated by the Coast Guard and the Navy. The Bureau does have meteorological personnel on them, but the reduction in the number of ocean weather stations——

Mr. THOMAS. That is not primarily your job, is it? Whose is it? Is it the job of the Navy?

Dr. REICHELDERFER. The meteorological part is primarily our job. This is in under our basic statutes. We have the responsibility for the basic meteorological service not only in the United States——

Mr. THOMAS. That is the small part of the cost; is it not? Who pays for the operation and maintenance of the station?

Dr. REICHELDERFER. The Coast Guard and the Navy pay the operating costs of the ocean weather station ships.

Mr. THOMAS. Did they withdraw their services and force you to withdraw with them, or who started the ball to rolling?

Dr. REICHELDERFER. The reduction was a result of a London conference of the countries engaged in maintaining and carrying on the ocean weather station program, and this conference decided that for economic reasons, perhaps, somewhat because of improvements in meteorological techniques, the minimum number of ocean stations could be reduced from the wartime level and the level just after the war.

Mr. THOMAS. Has there been any diminution in the service or in the accuracy of your forecasts?

Dr. REICHELDERFER. I am sure there has been.

Mr. THOMAS. Has the hazard of flying increased or decrease, or remained on a constant level by virtue of the reduction of the stations in the Atlantic and Pacific?

Dr. REICHELDERFER. It would be difficult to point to specific cases, but there is no question that when one reduces the basic data in meteorology or in any science, the end product and the predictions or the conclusions usually suffer some loss in accuracy. So, I am sure that the level of accuracy of the forecasts cannot be considered as high as it was during the war when we had 21 stations.

SALARIES AND EXPENSES

Mr. THOMAS. How much money are you looking for in this supplemental, Doctor?

Dr. REICHELDERFER. The regular supplemental asks for $840,000 for salaries and expenses, and $1,300,000 for equipment or capital investment.

Mr. THOMAS. And 97 positions?

Dr. REICHELDERFER. Yes, sir; a total of 97 positions under "salaries and expenses."

Mr. THOMAS. $840,000 for salaries and expenses?

Dr. REICHELDERFER. Yes, sir.

Mr. THOMAS. How much capital equipment?

Dr. REICHELDERFER. $1.3 million.

Mr. THOMAS. Of what is that made up?

Dr. REICHELDERFER. Primarily of aircraft and instrumental equipment for severe storm research, hurricanes, tornadoes, squalls, cloudbursts, and all of the violent weather conditions associated with severe storms.

INCREASE IN PERSONNEL REQUESTED

Mr. THOMAS. You are seeking an increase of 97 personnel, 22 of them for research and 75 of them for weather warning; is that correct?

Dr. REICHELDERFER. For weather radar, yes. These 75 are for the purpose of manning the radar stations full time so that a continuous watch can be kept for storms over the area.

LONG-RANGE RADAR STATIONS

Mr. THOMAS. What are you putting into effect now? Your new long-range radar with these people?

Dr. REICHELDERFER. It is for this purpose.

Mr. THOMAS. How many of them do you have, and what is the range of the new ones?

Dr. REICHELDERFER. 31 is the final installation number. The range is, depending on atmospheric conditions, 150 to sometimes 250 miles out in all directions from the station.

Mr. THOMAS. What was the radius of the old ones that these replace? Was that range 40 or 50 miles, or less?

Dr. REICHELDERFER. Well, the effective range was about that. Sometimes we can go up to 75 or 80. The old equipment you have asked about is equipment we took over from the Navy—obsolete equipment—and reconditioned for immediate use until we could develop this much higher powered equipment.

Mr. THOMAS. What do these new ones cost you?

Dr. REICHELDERFER. The unit cost is $95,000 for the equipment, and $26,000 for installations, on the average.

LOCATION OF LONG-RANGE RADAR STATIONS

The details of where these are located are given on page 4 of the justifications.

Mr. THOMAS. I think it might be well to put them in the record at this point.

(The page referred to follows:)

Staff for continuous operation and maintenance of long-range weather search radar (31 facilities authorized through fiscal year 1958)

	Installation completion	Available for operation	Man-year requirements, maintenance		Man-year requirements, operation, including training	
			Fiscal year 1959	Fiscal year 1960	Fiscal year 1959	Fiscal year 1960
Miami, Fla	September 1958	November 1958	1.1	1.2	3.3	5.0
Washington, D. C	January 1959	March 1959	.8	1.2	1.7	5.0
Atlantic City, N. J	do	do	.8	1.2	1.7	5.0
Charleston, S. C	February 1959	May 1959	.7	1.2	.8	5.0
Wilmington, N. C	do	do	.7	1.2	.8	5.0
Brownsville, Tex	do	do	.7	1.2	.8	5.0
Lake Charles, La	March 1959	do	.6	1.2	.8	5.0
Burrwood, La	do	do	.6	1.2	.8	5.0
Apalachicola, Fla	do	do	.6	1.2	.8	5.0
Tampa, Fla	do	do	.6	1.2	.8	5.0
Key West, Fla	April 1959	June 1959	.5	1.2	.4	5.0
New York, N. Y	do	do	.5	1.2	.4	5.0
Daytona Beach, Fla	do	do	.5	1.2	.4	5.0
Galveston, Tex	do	do	.5	1.2	.4	5.0
Kansas City, Mo	do	do	.5	1.2	.4	5.0
Oklahoma City, Okla	May 1959	July 1959	.4	1.2		5.0
Minneapolis, Minn	do	do	.4	1.2		5.0
Wichita, Kans	do	do	.4	1.2		5.0
Amarillo, Tex	do	do	.4	1.2		5.0
Evansville, Ind	do	do	.4	1.2		5.0
Sacramento, Calif	June 1959	do	.3	1.2		5.0
Des Moines, Iowa	do	do	.3	1.2		5.0
Detroit, Mich	do	do	.3	1.2		5.0
St. Louis, Mo	do	do	.3	1.2		5.0
Little Rock, Ark	do	do	.3	1.2		5.0
Cincinnati, Ohio	July 1959	do	.2	1.2		5.0
Buffalo, N. Y	do	do	.2	1.2		5.0
Chicago, Ill	do	do	.2	1.2		5.0
Knoxville, Tenn	do	do	.2	1.2		5.0
Charleston, W. Va	do	do	.2	1.2		5.0
Fort Worth, Tex	August 1959	August 1959	.1	1.2		4.6
Subtotal			14.3	[1] 37.2	14.3	154.6
Central office supervisory staff			2.0	2.0		
Total			[2] 16.3	39.2	14.3	154.6

[1] Contemplates 1 electronics technician per station plus regional supervisors.
[2] The figure 18.5 is represented in the President's budget.

Mr. THOMAS. Gentlemen, will the committee members take a look at page 4 here, please?

Apparently you have a pretty good, widespread coverage here; have you not?

Dr. REICHELDERFER. We have a chart with circle showing the area covered.

Mr. THOMAS. I see you have some in the District of Columbia, New Jersey, South Carolina, North Carolina, Texas, Louisiana, Florida, New York, Missouri, Oklahoma, Minnesota, Indiana, California, Ohio, Michigan, Arkansas, Tennessee, and West Virginia.

So, apparently you are getting some pretty good distribution.

Dr. REICHELDERFER. This covers, in effect, all of the coastal hurricane regions and parts of the Midwest where most tornadoes occur.

ESTABLISHMENT OF METEOROLOGICAL EQUIPMENT

Mr. THOMAS. Now, let us take a look at your capital investment. What are you going to buy with this? What was that figure?

Dr. REICHELDERFER. $1.3 million.

Mr. THOMAS. What are you going to get with it?

Dr. REICHELDERFER. On page 10 the details are given.

Mr. THOMAS. Wait a minute. Let me follow you here. It is also given on page 10–A; is it not?

Dr. REICHELDERFER. Yes, sir.

Mr. THOMAS. Insert at this point pages 10 and 10–A.

(The pages referred to follow:)

Instrumentation of 3 aircraft

	Cost
1. Precision navigational system to give positive wind direction and speed, drift and ground speed, and true airspeed (APN 82). Cost for 4 sets (2 sets will be obtained without cost from present TB–50's)	$220,000
2. Installation and test benches for 1. above	90,000
3. Liquid water content measuring systems and icing rate systems	43,000
4. Modification of aircraft search radar for vertical plane (APN 59), installation of APS–20 search radar, and ground power test benches and related maintenance facilities	178,000
5. Master time reference and synchronization system	50,000
6. Rebuild and install humidity, sea surface temperature, electric field, and vertical gust recorder systems	65,000
7. Provide for digital recording of radio and pressure altimeters and redesign photopanel recorders	80,000
8. Install separate digital recorder system for wind components	100,000
9. Substitute transistors for electronic tubes in digital recorder system and replace IBM cards with tape recorders	116,000
10. Install new model flight checking system, high response thermometer and new albedo measuring systems	59,000
11. Installation of meteorological instruments on aircraft including cable and associated costs	90,000
Total requirements for instrumentation of three aircraft under establishment of "Meteorological facilities" appropriation	1,100,000

In addition, 10 Air Weather Service reconnaissance planes will be equipped to continuously record weather data encountered during flights into hurricane and typhoon areas. These planes are presently equipped with meteorological instrumentation to carry out their daily hurricane hunter flights but data must be recorded manually. A complete observation takes 20 to 25 minutes time and the plane covers 75 to 100 miles in this period. With hurricanes often less than 150 miles across, much valuable data for research is being lost.

The Air Force has agreed to permit installation of photopanel recorders on their planes so that minute-by-minute readings of the meteorological instruments can be obtained from film records made during flight. This will significantly increase the amount of research data available from each hurricane.

Data to be recorded will include:

Time	Wind speed	Temperature
Latitude	Pressure altitude	Compass heading
Longitude	Radio altimeter attitude	Indicated airspeed.
Wind direction		

Cost estimates for these recorders are $20,000 for each of 10 planes: $200,000.

PRECISION NAVIGATION EQUIPMENT

Mr. THOMAS. That gives you $1.3 million for the establishment of meteorological facilities and what is the first item here?

Dr. REICHELDERFER. For precision navigation equipment. One of the factors entering into the intensity of hurricanes as well as their development——

Mr. THOMAS. Is that the $275,000 item?

Dr. REICHELDERFER. That is $220,000.

Mr. THOMAS. $220,000?

Dr. REICHELDERFER. Yes, sir. Wind velocities are important in these studies, and in the prediction of severe storms because they not only represent the intensity of the storm as such, but they have a bearing on the development of the storm and how it will move.

These things, of course, one must know in order to warn the right localities, and to warn them in time.

Mr. THOMAS. Where is this equipment located, Doctor?

Dr. REICHELDERFER. This equipment will be installed in the airplanes which will be used to fly into severe storms to determine just what the storm mechanism is so that forecasters can predict their development accurately.

Mr. THOMAS. Who developed this equipment?

Dr. REICHELDERFER. The military departments developed the aircraft equipment: I believe it is the General Precision Laboratory, Inc., that developed the automatic navigator.

Mr. THOMAS. Was any research done by the Air Force?

Dr. REICHELDERFER. The development of the aircraft navigational equipment as such has been done by the Air Force, and this equipment has just come on the market.

Mr. THOMAS. What about the meteorological equipment? Who did the research on it?

Dr. REICHELDERFER. Some of it has been developed by the Bureau and the General Precision Laboratory, Inc., has worked under contract with the Weather Bureau to develop much of the meteorological installation in the aircraft.

Mr. THOMAS. These aircraft are on loan. You are not going to buy any aircraft; are you?

Dr. REICHELDERFER. No, sir. We do not plan to buy aircraft with these funds. This first item you inquired about, Mr. Chairman, is a meteorological instrument for our purposes.

Mr. THOMAS. Did I understand correctly that the Air Force developed it also?

Dr. REICHELDERFER. It did for use on the aircraft. For the last 2 years, and continuing this year, we have used aircraft provided by the Air Force.

Mr. THOMAS. How many of these are you going to buy?

Dr. REICHELDERFER. The funds provided here would enable us to contract for the services of three aircraft. We do not expect to buy any.

Mr. THOMAS. All of this is equipment? I note you have "Installation, $90,000"; "Liquid water content measuring system and icing rate system, $43,000; "Master time and synchronization system $50,000." These are all round figures.

"Installation of meteorological instruments on aircraft including cable and associated costs, $90,000."

Are all of these 11 items separate and distinct?

Dr. REICHELDERFER. There are some 10 or 15 miles of electric cable in the meteorological instrument connections in each airplane.

INSTALLATION OF NEW CHECKING SYSTEM

Mr. THOMAS. Another item is to install a new checking system.

Dr. REICHELDERFER. They are each separate and distinct.

NEW MEASURING SYSTEM

Mr. THOMAS. And you also have an item listed as a new measuring system. What is that?

Dr. REICHELDERFER. It is to measure the amount of energy received from the sun, that is, intercepted by the earth but reflected back into space.

This is a very fundamental thing, Mr. Chairman. Put in the simplest terms, the weather forecaster at the present time is under the requirement of predicting what is going to happen in the behavior of the heat engine, represented by the atmosphere, without knowing the energy input.

AIR FORCE RESEARCH IN METEOROLOGICAL EQUIPMENT

Mr. THOMAS. Doctor, how is it that the Air Force is stealing your show here in doing research and coming up with this improvement of this meteorological equipment? Their job over there is flying planes, and yours is weather. How come they have taken the lead on you here?

Dr. REICHELDERFER. We have used an instrument developed by the Air Force for air navigational purposes. We are using it for meteorological purposes. It is the responsibility of the Air Force to develop air navigational equipment for their own use.

Mr. THOMAS. It is, and not your responsibility?

Dr. REICHELDERFER. Not the air navigation equipment; no, sir.

INSTALLATION OF PHOTOPANEL RECORDERS

Mr. THOMAS. Gentlemen, may I read this sentence in here? This little paragraph is very good:

The Air Force has agreed to permit installation of photopanel recorders on their planes so that minute-by-minute readings of the meteorological instru-

ments can be obtained from film records made during flight. This will significantly increase the amount of research data available from each hurricane.

That is not a bad idea.

The data to be recorded will include time, latitude, longitude, wind direction, wind speed, pressure altitude, radio altimeter altitude, temperature, compass heading, and indicated air speed.

The cost estimate for these recorders are $20,000 for each of 10 planes?

Dr. REICHELDERFER. That is right.

Mr. THOMAS. And that is in addition to the equipping of your three planes at a cost of $1.3 million?

Dr. REICHELDERFER. The three planes are devoted exclusively to meteorological research.

Mr. THOMAS. How firm an estimate is this $1.3 million for these items, and this $200,000?

Dr. REICHELDERFER. The estimate is based upon inquiries——

Mr. THOMAS. Ten or fifteen percent cushion?

Dr. REICHELDERFER. I do not think there is any cushion at all, Mr. Chairman. We got the estimates from the CAA and from the Air Force, and from commercial airlines as to how much it would cost to operate.

Mr. THOMAS. Could you settle for $1 million on this first item?

Dr. REICHELDERFER. We would not want to settle for any less, but, of course, we will settle for whatever you will give us.

Mr. THOMAS. Mr. Yates, do you have any questions?

Mr. YATES. I believe not at this time.

Mr. THOMAS. Mr. Flood?

WEATHER BUREAU'S 5-YEAR PLAN

Mr. FLOOD. Mr. Chairman, there is no sense in my attempting to cover that part of this examination which only you can do as well as you did. I do not want to gild the lily, of course, but what I would like to know: I have before me a brochure, pamphlet, document, or whatever the current word is—sent to me by the Department of Commerce, Weather Bureau.

It is called Design for a Modern National Aviation Weather System.

The title is "A Plan for Modernizing the National Aviation Weather Service To Promote the Safety and Efficiency of Air Operation, Through Fiscal Year 1963."

It is put out by the United States Department of Commerce, Weather Bureau, and the date of it is March 1958.

There is the cover information.

Mr. Chairman, I have read this a number of times, and this is an extraordinary document. I hope it is true.

I also have in my hand here an excellent synopsis of this document—the document, by itself, by the way, is 53 pages, including many diagrams, pictures, and charts, and I recommend it to every Member of Congress, especially this subcommittee. However, I have, as well, a synopsis of this document which I received this morning, or which I saw this morning in a magazine, and my secretary brought it to my attention, called the AOPA Pilot.

I do not know the magazine, but it is a very slick-looking job, and it contains this Weather Bureau 5-year plan. It is an analysis and

a synopsis of the aforementioned pamphlet, and it is only a page or two pages in length. It is a very valuable contribution, and I would like to insert it at this point in the record.

(The matter referred to follows:)

WEATHER BUREAU'S 5-YEAR PLAN

PROPOSED $100 MILLION EXPANSION PROGRAM WOULD GIVE FLIERS FASTER SERVICE AND A BETTER PICTURE OF FLYING CONDITIONS OVER WIDER AREA

[From the AOPA Pilot, June 1958]

With its present facilities strained beyond efficient limits, the United States Weather Bureau has made public a modernization plan which will cut aviation a big slice of the benefits that automation and other technological advances can produce in the meteorological field.

The Bureau's long-range plans were announced in response to a statement from the Civil Aeronautics Administrator delivered to the Weather Bureau last January listing CAA's requirements for aviation weather service.

Revamping operations, scheduled for completion by 1963, are big—informal estimates placing the cost close to $100 million. Much of this money will be spent improving observation and forecast methods for en route and terminal weather, and in reshaping the important field of data dissemination. To support these efforts, the aviation weather network itself will be extended and research and development work sharply stepped up.

Demands on the aviation weather service have reached overwhelming proportions. They arise not only from the increasing numbers of planes, but from the always more detailed nature of weather information required by aviation. Every aeronautical advance which increases the range, speed, and cruising altitude of aircraft affects the quality and quantity of weather data needed. Too, the necessity for speeding up acceptance rates at highly congested airports, especially in instrument and marginal weather, calls for better forecasts and more accurate terminal data.

This would be enough to cause Bureau planners concern, but the Weather Bureau already foresees new problems inherent in the turbine-engined aircraft soon to be widely used in civil aviation. These planes, because of their special performance characteristics, will be putting to the Bureau questions it is not now physically equipped to answer.

All these and other signs of growing demand have prompted the Bureau to prepare a massive service program which will enable it to get more weather information to more pilots—accurate, detailed, fresh, and fast.

One thing stands out in the Weather Bureau's report. Efforts to meet the new requirements for service by stepping up the pace of present-day methods can't succeed. It will take new techniques, which make maximum use of mechanization and automation and leave to the human mind only those matters requiring decision-making or nonroutine treatment.

Nowhere is this clearer than in the field of dissemination of weather data, and it's here that the Bureau's plans will most personally touch the majority of pilots in general aviation.

Individual pilot weather briefings will soon be outmoded by mass briefings over automatic transcribing equipment. This has been coming for a number of years as it became more apparent that, with increasing traffic, the Weather Bureau could no longer handle briefings on a person-to-person basis.

AOPA was one of the first to urge the Department of Commerce to establish continuous flying-weather broadcasts using tape recorders and repeater equipment, and several years ago proposed to the Weather Bureau that weather service be extended to 88 low-frequency ranges.

Aim of the mass briefing is to put weather information in usable, comprehensive form. By broadcasting it over radio ranges and recording it for automatic telephone-answering systems, the Bureau expects to relieve a large part of the congestion, speed up service, and save the nerves and dispositions of pilots seeking briefings. Since much information needed is routine, and many pilots in the same geographic area seek the same advice, an automatic, unmanned instrument can supply this data as well as can Weather Bureau personnel.

The plan does not foresee an end to individual pilot briefings entirely. A Washington Weather Bureau official pointed out recently that any pilot who

needs special help will always be able to get it through direct contact with a weather office. The Bureau's object is to lift the routine from these offices and permit those pilots, who can, to help themselves from transcribed sources. Anybody who has hung on the phone for long periods waiting to get a clear line to the Weather Bureau office will call this good news.

The 88 low-frequency ranges which will be changed from ranges to nondirectional facilities by 1962 will all be equipped to send out continuous weather information if present plans are realized. Data will be collected by the Weather Bureau from within a 250-mile radius of each facility, and the CAA will operate the stations and prepare transcriptions. The 88 ranges are so spread over the country that all 5,000 outlying airports lacking weather facilities should be in contact.

The Arcola facility near Washington, D. C., is the only one of the 88 ranges now making continuous weather broadcasts, but by June 1958, the facility at Indianapolis, Ind., should be operating. The Arcola range, broadcasting since 1954, gives pilots NOTAMS, hourly reports, weather forecasts for selected routes, winds aloft, and other weather data to 10,000 feet.

Efforts to install continuous weather broadcast equipment at the 88 ranges began several years ago, and, by January 1959, the Weather Bureau and the CAA expect to have this service in operation at 21 L/MF ranges.

When the Arcola broadcasts appeared successful, CAA purchased equipment for a number of additional stations. This equipment, CAA knew, would have to undergo certain modifications, but installation was begun at the Los Angeles facility. Unexpected technical difficulties developed, which brought the whole program to a halt, and these difficulties have only recently been solved.

Continuous weather broadcasting was expected to start at the Indianapolis facility in time for the 500-mile automobile race, May 30.

CAA now has on hand 36 sets of equipment, and has funds budgeted which will enable it to complete the whole program within the next 2 years. If the equipment at Indianapolis proves the bugs are out, it appears the program can be rushed ahead.

Eventually, the Weather Bureau hopes, pilots will be able to dial directly into these transcriptions, but arrangements have not yet been worked out with the telephone companies to make it possible. Telephone transcriptions will, nevertheless provide a large part of the weather advisory service in the future and permit a pilot to make his own flight decisions while sitting at home.

Another self-help feature will be the automatic pictorial displays of flying weather conditions.

Symbols and color codes will show currently reported weather conditions, and as teletypewriter weather reports come in the new information will be automatically changed on the pictorial display. In the beginning, the displays will be limited to current weather information, but the Bureau expects to perfect them for use in showing forecast weather before too long.

Initially, the pictorial charts will originate at several central points and be disseminated by facsimile to other airports. The program calls for extension of this facsimile circuit to all air traffic communications stations in locations where there are no Weather Bureau offices.

Accurate knowledge of weather conditions in the terminal area has a lot to do with the rate at which planes can be handled at major airports. This is one of the reasons for the importance of the terminal phase of Bureau's plans. Special problems of the turbine engine make terminal weather important, too. The Bureau's report points out how much air density over the runway can effect the length of takeoff and allowable fuel and payload of a jet turbine engined plane. Air density also bears on its speed, fuel consumption and range. The report states that "for a typical large jet turbine engined aircraft taking off from a 7,000-foot runway at a pressure altitude of 2,000 feet, at 10° F. change in temperature or a 300-foot change in pressure altitude will change the maximum gross load by some 2,000 pounds."

This doesn't affect general aviation too much now, but one other factor at the terminal area does. Every aircraft held excessively long over an airport while waiting for permission to land suffers economic penalties. Those planes whose fuel consumption goes up when they have descended from higher, optimum altitudes may have the worst of it if they are required to hold. But improved terminal forecasting which helps anybody will actually help everybody.

The Bureau will put its instruments where they will be most effective, improving the exposure of the measuring equipment.

On all airports which have instrument landing systems (ILS), rotating-beam ceilometers to measure cloud height and transmissometers to measure runway visibility will be installed. They'll provide a continuous calculation of the slant-range visibility to pilots making an approach in poor weather conditions.

By January 1958, rotating-beam ceilometer and transmissometer installations were completed at 32 locations and the Bureau has the funds for provision of an additional 79. Many hundreds more will be in by 1963, however, if the Bureau gets appropriations to carry out its plan.

Instruments to measure runway temperature, dew point, and wind speed and direction will be placed at additional locations. Standard wind instrument exposures are now limited to a few coastal locations.

At present, the only terminal forecase service available to pilots on a regular basis is the 24-hour trend forecast of airport weather provided for flight planning and dispatching. This service will be continued and supplemented by two other important services: (1) Detailed 5 to 15-minute statements of the slant-range visibility trends, which will be issued continuously and telemetered to Air Traffic Control for planning landing sequences. (2) Forecasts of terminal weather in somewhat less detail for up to 2 hours in advance, issued at frequent intervals to assist the making of operational decisions relating to descent from cruising altitude and planning of air traffic control.

Efforts to improve en route weather observing and forecasting will take the Weather Bureau's attention into the upper airspace—the stratum extending from 20,000 to 45,000 feet. Forecast and warning service below 20,000 will also be strengthened. As the Bureau's report points out, the next few years will see civil aviation aircraft cruising at heights of 40,000 feet or more. This has the effect of doubling the vertical band of airspace in which reliable weather measurements are needed. While this may be of less immediate importance to general aviation fliers, better understanding of the entire aviation weather picture can be expected to come with improvement in high altitude observations.

Forecasts of high-altitude winds, temperatures and so forth will be made on a regular basis for selected levels between 20,000 and 45,000 feet. Special high-altitude forecasting centers are planned which will put out pictorial charts showing the forecast weather for these levels.

The Flight Advisory Weather Service set up in March 1957, will be strengthened. This is the program which provides for in-flight advisories to pilots of potentially hazardous weather. The service has been operated on an incomplete basis, without sufficient staff and adequate support, but has proved its effectiveness.

The Bureau also has plans to make pilot weather reporting and reports from ocean vessels more effective. A joint CAA-Weather Bureau program will collect in-flight reports and pass them on to users.

Airline communications circuits carrying weather reports of airline pilots will be turned in and transcribing devices on CAA air-ground communications channels will record in-flight weather information automatically. Selected airport stations will be designated as pilot weather report collection and processing centers.

Storm warning should become more effective when a basic national weather detection radar network is completed. Radar sets now on order for delivery before July 1, 1959, will provide for 30 percent completion of this scheme. It might be interesting to note here that joint Weather Bureau/CAA use of radar installations in the past has not proved too satisfactory because of conflicting performance requirements. CAA's air traffic surveillance requires equipment which leaves out radar weather patterns while the weather detection equipment requires that these features show up sharply.

Basic to all proposals for improved dissemination of information, terminal and en route projects is an expanded aviation weather network.

Additional weather stations will be required at many places where no facilities now exist and airport weather stations are now planned for approximately 35 high-activity airports. The extent of terminal aviation activity and the CAA's plans will determine where these stations will be located and which ones get priority.

Altimeter beacon stations will be set up at remote mountain top locations where atmospheric conditions are likely to cause serious altimeter error. By 1963, 70 of these should be installed, according to the plan. Other synoptic meteorological data from remote regions will be collected by automatic stations and present plans call for 25 of these to be established.

Physical expansion of facilities is not enough, however, and the Aviation Weather Service will be supported by an enlarged research and development program.

Among the phenomena planned for further study are jet streams, clear-air turbulence and icing. Research will be continued to develop better methods of forecasting areas of extreme vertical drafts. This is important as an aid to vertical separation of aircraft in areas of turbulence. Considerable attention will be given to statistical methods of forecasting en route weather, upper level winds and temperatures, and so forth.

The researchers will delve into the processes which must be detected to forecast short-period variations in terminal weather. Here, studies will be made of data pouring continuously in from a dense grid of specially instrumented automatic weather stations ranged about a major airport.

In the past the Bureau has farmed out its research projects to regular operational field offices. Since this has not proved altogether satisfactory, a forecasting test and development unit will be formed when funds are available.

Recent meteorological developments can revolutionize the methods of weather analysis, some of these methods making possible for the first time in history a fully global analysis of the complexities of the atmosphere and the interhemispheric relationships.

Now it is possible to fill some of the gaps in coverage which have limited the data available for interpretation. These stretch both horizontally across the earth's surface and vertically into the upper airspace. One of the gaps is the vast ocean area covering 70 percent of the globe where weather observations have been largely confined to the chief sea and air lanes. Upper air observations have also been limited, depending on brief samplings taken a couple of times daily at widely separated observation points.

One of the new tools was developed from military experiments in the use of unmanned, free-floating, constant-level balloons for data collection. These balloons, provided with instruments and radio transmitters and set adrift at predetermined altitudes can send down information to ground stations which keep them in "sight" with radio direction-finding methods.

The Weather Bureau also expects eventually to make use of refraction and radiation techniques to make indirect soundings of the vertical temperature and moisture structure of the atmosphere.

For the meteorologist the whole business has long-range excitement. And the private flyer can take immediate satisfaction from knowing that the weather services are ready to tackle these serious problems in a realistic manner which may eventually take many of the unknown and the accidents out of flying weather.

Mr. FLOOD. Now, with reference to the document itself, Mr. Chairman, I find on page 1 this, and I would like to direct the attention of the witnesses to this document:

Do you have it in front of you?

Mr. THOMAS. Read it into the record.

Mr. FLOOD. I have a half dozen excerpts that I have marked which are actually topical sentences.

From the first part—and this is divided into two parts—the first part is describing the situation and proposals and the last part is the detailed presentation of the entire program.

Because of the time element involved here, I will talk about only the first part of this document. I direct your attention, Dr. Reichelderfer, to page 1, the third paragraph thereof, where I find this language, and I quote:

Today, the Bureau's facilities—

that means your Bureau—

for data collection and processing, for the preparation of forecasts and warnings, and for their distribution into using channels are already stretched beyond the limits of efficient operation in terms of both quality and quantity.

That is quite a shocking statement. I repeat now for emphasis:

Already stretched beyond the limitation of efficient operation in terms of both quality and quantity.

That means today?

Dr. REICHELDERFER. Yes, sir.

Mr. FLOOD. At the bottom of the page I find this language, and I quote:

Today, the gap between the weather service needs of air operations and that which can be provided borders on a critical limit.

At the top of the next page, the same paragraph, there is the following:

During the next few years the growing aviation industry will create still greater demands to be met.

On page 2, reading the entire third paragraph, I quote:

More dramatic is the effect on meteorological requirements to come from extensive use of jet-turbine aircraft in civil aviation within the next few years, and scheduled to begin over the New York-Europe route in November 1958. These aircraft, by virtue of their design characteristics, fly at altitudes where observations of the state of the atmosphere are still inadequate in terms of numbers and accuracy, and for which no forecasting service exists to warn of jetstream headwinds, clear air turbulence, or other weather conditions bearing on safety and efficiency of operations.

The next paragraph reads as follows:

Further air traffic increases will make more serious the instances in which severe turbulence abruptly, and without warning, displaces aircraft vertically into flight altitudes assigned to others.

The last part of the sentence of the second paragraph on page 4 is as follows, and I quote:

Implications place greater emphasis on the need for accurate, specialized observations and forecasts of terminal weather conditions.

Now, on page 5, the first sentence, is this:

Weather service to aviation was made a primary responsibility of the Weather Bureau by the Civil Aeronautics Act of 1938, as amended.

On page 7 I find this:

To realize the benefits to come from completion of the aviation weather system will require that there be available a national weather communications system having the capacity to keep pace with increasing requirements. Ultimately, it must have a volume and speed capacity at least severalfold that of the present system.

The third paragraph on page 7 is as follows:

Without fully adequate communications support the goal of freshness of weather information and attendant increase in accuracy, as set down in the report of the special assistant to the President for aviation facilities planning, will remain unattainable.

The first sentence in the last paragraph reads as follows:

The plan takes into account the increasing need for measuring specified weather elements directly in the airport approach zone, and for reporting these measurements immediately in direct support of landing operations during periods of bad weather. Also, truly representative measurements of meteorological elements which directly determine the takeoff and landing distances and allowable payload, particularly wind and temperature, will be an urgent requirement for the operation of the jet-turbine civil transports which will be introduced into scheduled passenger service in late 1958.

The next to the last item is this:

In brief, the plan for modernization of surface weather observing provides for installing automatically operated cloud height and runway visibility measuring equipment at all airports having instrument landing systems. The measurements will provide means for continuously computing integrated values at slant/range visibility and reporting of runway visibility to aid the pilot making an approach to the airport under low weather conditions.

And on page 11 with reference to en route weather is the following:

The next several years wil see an abrupt extension of the cruising levels of civil aircraft to heights of 40,000 feet or more, thereby doubling the vertical extent of the airspace occupied by civil passenger carrying aircraft.

On page 12, the last sentence of the first paragraph, is the following:

The Weather Bureau's upper air observing network is a common system serving both civil and basic military aviation requirements.

COST OF LONG-RANGE PLAN

I gather from this magazine report and from newspaper accounts that I saw in the Washington papers yesterday morning and last night, that the target figure in a round, fat number, for this proposal through fiscal year 1963 in dollars, is $100 million; is that right?

Dr. REICHELDERFER. We have not been able to fix firm figures. It would be of that order, but you see, as this program develops, equipment which we think we will need now may turn out to be unnecessary, or there may be changes, but it would be of the order of several tens of millions of dollars.

Mr. FLOOD. What about the additional equipment which you do not see now, but which you might have to acquire?

Dr. REICHELDERFER. It might be more than that.

Mr. FLOOD. And it might be more expensive, taking this off and putting that on in all categories and all possibilities? $100 million is not an excessive educated guess; it is, through 1963, beginning with fiscal 1959?

Dr. REICHELDERFER. As an indication of the order of magnitude, it certainly is about right.

Mr. FLOOD. Each of these statements that I read from your report is true, or reasonably true, and if $100 million is a reasonable expectancy to execute the program and if it is as urgent as you indicate that it is, and if we are going to put jet commercial transportation into the air before the end of this calendar year, how much have you asked for in the 1959 budget now before us in this supplemental, or do you propose to ask in a supplemental to follow this, if any, to execute this program?

Dr. REICHELDERFER. In the supplemental now before the committee there are no funds for the program visualized in that pamphlet.

Mr. FLOOD. Why not?

Dr. REICHELDERFER. Two reasons: We took in this year's estimates those things which we considered of the highest priority.

IMPORTANCE OF HIGH ALTITUDE WEATHER REPORTING

Mr. FLOOD. Do you know of anything of any higher priority than air measurement? Let me point this out to you, Doctor:

You tell me that we are going to fly jet transports flying passengers across the oceans between two continents and they are going to take off in the continental United States before the end of this year—October is probably a fact, and certainly November—and they are going to fly you and me and other Americans. Do I understand it is not safe for these transports to fly because you do not have fit and proper or adequate safe high-altitude weather forecasting and transmission and observation? Is that true?

Dr. REICHELDERFER. We consider this an urgent item.

Mr. FLOOD. Is the answer to my question yes or no?

Dr. REICHELDERFER. I do not believe I could answer with a flat yes or no.

Mr. FLOOD. Well, answer it yes or no, and then tell me what your problem is.

Dr. REICHELDERFER. You are correct, sir.

Mr. FLOOD. The answer is yes; and you are going to explain?

Dr. REICHELDERFER. That is right, sir.

Mr. FLOOD. Go ahead.

Dr. REICHELDERFER. I would not want to speak on the elements of safety of aircraft which was included in your question.

Mr. FLOOD. Safety of aircraft insofar as that part of aircraft safety is predicated upon observation and transmission of meteorological weather information.

Dr. REICHELDERFER. I certainly can say that the weather information is inadequate to give the pilots what they need for safety.

Mr. FLOOD. That will do it. Yet, in view of what you have just said, in your own language, you still feel that there are matters of higher priority even though these aircraft have been certified and commissioned and certificated to take over here within the next few months? It will not be safe insofar as that element of safety for aircraft deals with meteorology and weather at high altitudes for jet turbine civil transporation; is that right?

Dr. REICHELDERFER. I believe so.

Mr. YATES. Mr. Flood, would you yield at that point?

Mr. FLOOD. Yes, sir; sure.

Mr. YATES. Mr. Flood's question related to intercontinental travel. What about travel across our own country? Does the same danger prevail there?

Dr. REICHELDERFER. The same applies; yes, sir.

Mr. YATES. The same condition would prevail insofar as travel across our own country is concerned?

Dr. REICHELDERFER. We are not prepared to give wind, temperature and turbulence forecasts at high jet operating levels.

Mr. YATES. This is only above——

Dr. REICHELDERFER. 20,000 feet.

Mr. FLOOD. You were not prepared to get meteorological observations, weather observations, weather forecasts, and transmission enroute, or in any other way, above 20,000 feet to 50,000 feet for jet turbine civil transports which are commissioned and certified to fly transcontinental and intercontinental before the end of this calendar year; is that right?

Dr. REICHELDERFER. The organization is not in existence at the present time to do that.

Mr. FLOOD. Why have you not asked for the money? Simply because you think something else is more important?

Dr. REICHELDERFER. Mr. Congressman, we asked for money to set up this service.

Mr. FLOOD. You asked who?

Dr. REICHELDERFER. In our estimates for 1958.

Mr. FLOOD. Whom did you ask for it?

Dr. REICHELDERFER. We defended this both before the House committee and the Senate committee.

Mr. FLOOD. I am talking about 1959. Did you ask in the 1959 budget for any supplemental thereto up until this morning of the Department of Commerce or the Bureau of the Budget, or anybody else, for funds to execute this program to which I refer?

Dr. REICHELDERFER. We have asked for funds to provide the high-altitude flying service that you have asked about.

Mr. FLOOD. How much did you ask for? First, how much, and second, who, and third, when?

Dr. REICHELDERFER. The request forwarded by the Secretary of Commerce to the Bureau of the Budget in preparation for our hearings this year on our estimates carried an item of "High-altitude forecasting for jet-age operations" in the amount of $705,500.

Mr. FLOOD. That you submitted to the Secretary of Commerce and he approved it?

Dr. REICHELDERFER. Yes, sir.

Mr. FLOOD. And the Secretary of Commerce, to the best of your knowledge, submitted it to the Bureau of the Budget where it was reviewed and stricken out?

Dr. REICHELDERFER. It was not included in the estimate.

Mr. FLOOD. It was not included?

Dr. REICHELDERFER. No, sir.

Mr. FLOOD. Have you made any efforts to prevail upon the Secretary of Commerce to revive this item in the view of developments since you have submitted it?

Dr. REICHELDERFER. We considered asking for it in the supplementals that are now before the committee, but this item could not meet the requirements or the terms of reference for a supplemental, and the Weather Bureau did not ask for it.

Mr. FLOOD. Who laid down the yardstick for the terms of reference for this supplemental?

Dr. REICHELDERFER. I believe the terms of reference for a supplemental are of long standing, and each administration has applied them as terms for supplementals.

Mr. FLOOD. That is only partly responsive. What agency or what authority superior to your Bureau laid down for your Bureau terms, yardsticks, and rules for submission of the supplemental at this time?

Dr. REICHELDERFER. These are carried in directives from the Bureau of the Budget.

Mr. FLOOD. And the Bureau of the Budget for this supplemental did not permit you under such a method to include at this point requirements to execute high-altitude forecasting to guarantee safety for certificated jet turbine air civil transports; is that right?

Dr. REICHELDERFER. Well, to be perfectly fair, the Bureau of the Budget did not have an opportunity to turn us down because we simply did not ask for it under the terms of the supplemental.

Mr. FLOOD. The Bureau of the Budget under its yardstick, as you understand it, did not permit you to submit it?

Dr. REICHELDERFER. That is right.

Mr. FLOOD. And that is why you did not submit it?

Dr. REICHELDERFER. Yes, sir.

Mr. FLOOD. Would you like to have submitted it?

Dr. REICHELDERFER. Yes, sir; we would have.

Mr. FLOOD. Would you like to submit it now?

Dr. REICHELDERFER. Certainly.

Mr. FLOOD. Would you like to justify it now?

Dr. REICHELDERFER. We would be glad to.

Mr. FLOOD. That is, $750,000 for the specific item you mentioned of high-altitude forecasting and transmission?

Dr. REICHELDERFER. Yes, sir.

APPROPRIATION NEEDED IN 1959 FOR 5-YEAR PLAN

Mr. FLOOD. In addition to the $750,000 for that purpose, or that phase of this document that I hold in my hand, and to which I referred and from which I have quoted at some length, I notice on page 6 thereof your reference to what you call the system, which is the program, and there you say, and I quote:

> Five parts, each representing the fields of specialized operation, but all intimately related and complimentary, make up the weather system planned for completion in fiscal year 1963. They are:
>
> A. Terminal weather observing and forecasting.
>
> B. En route weather observing and forecasting.
>
> C. Weather information dissemination.
>
> Serving in direct support of these, and fundamental to the operation and success, are:
>
> D. Aviation weather network.
>
> E. Research and development.

Now, if what you say is true, it is my considered opinion that you cannot separate one from the other—A, B, C, D, and E, for the system, and that this is a system where each is an integral part of the whole, and indivisible and inseparable if the system is to serve the purpose that you indicated, and yet you speak of only one phase.

How much as an intelligent figure should you ask for—could you justify—for the fiscal period 1959, looking at a 5-year period of $100 million, to begin at once in the 1959 fiscal period as the first proper segment of this?

When I suggest $25 million as the proper figure to begin such a program, I base that upon my experience in many other departments as the beginning figure for a program of that size. What do you think?

Dr. REICHELDERFER. Well, it would be difficult to give a firm figure.

Mr. FLOOD. I am not asking for a firm figure.

Dr. REICHELDERFER. The $25 million would, I assume, include equipment costs, too.

Mr. FLOOD. Of course. I am speaking of this document from cover to cover. You know what is in here, and so do I.

Dr. REICHELDERFER. Yes; that document has not yet been costed. The document—I think it will be our position—will be a little better understood if I say that after the Curtis committee report on the aviation program and after the appointment of General Quesada and the formation of the Airways Modernization Board, it became quite clear from published documents that there would be greatly increasing requirements for meterological service if the system that they were working on was to operate as they expected.

Mr. FLOOD. The system they were working on. Who were they?

Dr. REICHELDERFER. I am talking about the air traffic control system. Weather is a part of that system.

Mr. FLOOD. I am talking only about weather.

Dr. REICHELDERFER. Yes, sir.

Mr. FLOOD. This document.

Dr. REICHELDERFER. Yes, sir. I would like to give a little more meaningful background for that document in about 1 minute.

Mr. FLOOD. All right.

Dr. REICHELDERFER. As a result of that conclusive evidence that there has to be a weather plan to go along with the air modernization plan, the aircraft-control plan in the broad sense——

Mr. FLOOD. There is no doubt about that; is that right?

Dr. REICHELDERFER. That is correct.

Mr. FLOOD. No possible plan for air safety can succeed under any circumstances unless an essential condition precedent and component is weather?

Dr. REICHELDERFER. This cannot be overemphasized.

Mr. FLOOD. All right.

Dr. REICHELDERFER. The Weather Bureau, with the cooperation of the Civil Aeronautics Administration and the Air Force and Navy, all of whom are necessarily involved in this plan as your quotations brought out, set to work to devise a plan over the next several years. We preferred a plan without year limit because at this stage we could not be sure about completion, but it seemed better in talking interdepartmentally to agree on a 5-year plan.

Mr. FLOOD. That means in that language through fiscal year 1963.

Dr. REICHELDERFER. That is correct. Accordingly, this plan was produced. We got the concurrence of the Air Coordinating Committee, and at this stage there have been no figures attached to the plan. The plan has not yet had the approval of regular budgetary authorities.

Mr. FLOOD. Nothing could interest me less than that, nothing, if you mean the Bureau of the Budget.

Dr. REICHELDERFER. I mention that because it has a bearing on the paper which has been given to members of the committee this morning in response to the inquiry by the chairman last Thursday during our testimony. This other paper provides for estimates of aviation weather service increases which are prerequisite to carrying out the plan.

The amount involved there for this fiscal year is roughly $4,500,000.

Mr. FLOOD. There is no doubt in your mind that over the period of the next 5 years at the minimum, and the same 5 years referred to as the target for this document, air traffic of all categories, includ-

ing the turbojet high-altitude flying civil transport, will saturate the controls for even this program?

Dr. REICHELDERFER. This seems quite evident.

Mr. FLOOD. Of course it is. Then there is no doubt about that fact, whether it has been yet resolved or not, as far as we are talking this morning. It is just a question of resolving a projected figure and certifying it. That is the only detail missing. There is no doubt about the fact.

Dr. REICHELDERFER. I would have to agree.

Mr. FLOOD. Of course. Go ahead, then.

Dr. REICHELDERFER. I think I have given sufficient background. You inquired about what we would do first to bring aviation weather service up to requirements. You have in your hands a pamphlet consisting of 13 pages which presents the items we regard as of highest priority.

Mr. FLOOD. Keeping in mind that the situation today is at the critical limit.

Dr. REICHELDERFER. Yes, sir.

Mr. YATES. What is that pamphlet entitled?

Dr. REICHELDERFER. It is simply Department of Commerce, Weather Bureau, a mimeographed document, called Document No. 2.

EQUIPMENT REQUIREMENTS FOR HIGH ALTITUDE REPORTING

Mr. FLOOD. Doctor, you are referring in this pamphlet to only one phase of this whole program, and you had this pamphlet here this morning only because we were discussing whether or not your existing facilities—hardware, personnel, and dollars—could or could not permit you to extend your forecasting and transmission and observations beyond 20,000 feet with what you had. You came here to show us that you could not do it with what you had, that you needed something more; but that deals only with one phase of the entire program. Is that not right?

Dr. REICHELDERFER. I am speaking about the second pamphlet, Mr. Flood.

Mr. FLOOD. Where is that? The second pamphlet, then, refers to high-altitude forecasts for international flight. We just talked about that. Item 2 is the installation of additional L/MF ranges by number. Restoration of aviation forecast briefing services. That is automatic transmission of briefing services as distinguished from individuals or a combination of both?

Dr. REICHELDERFER. It is a combination of both.

Mr. FLOOD. In other words, the mere fact that you are going to introduce in the next 5 years by hardware automatic tape recording briefing of terminal and en route weather observations does not mean you are going to abandon individual briefings if and when a pilot feels the need for it.

Dr. REICHELDERFER. Insofar as we can, yes.

Mr. FLOOD. Automatic aviation telephone forecasts. Of course, your first problem there is to make a deal with the telephone company, which you do not have firmed yet.

Dr. REICHELDERFER. We have this in operation in Washington.

Mr. FLOOD. Yes, but not nationwide as a transmission program. You do not have the package yet.

Dr. Reichelderfer. The telephone company has agreed to install it.

Mr. Flood. When did they agree to this: Last night? They did not agree at the time the publication was issued.

Dr. Reichelderfer. They have agreed——

Mr. Flood. They have agreed in principle.

Dr. Reichelderfer. They have agreed to this limited service for aviation only.

Mr. Flood. Communications facilities, development of the individual stations, additional airport weather bureau stations, with Tel-Autograph equipment, and completion of the upper air observing network for continental United States. Do you not include here transoceanic upper air observations?

Dr. Reichelderfer. Those are handled by the ocean weather stations and by stations we have established on some of the commercial vessels.

Mr. Flood. You are going into greater use and greater utilization of the Department of Defense upper stratosphere balloon systems. You are going to develop all through this program, are you not, the loose- and captive-balloon systems over water?

Dr. Reichelderfer. Yes.

Mr. Flood. This second document which you handed us this morning is little more than a reiteration of the cover document to which I referred, is it not? What more is in here which is not in the document which I quoted from? Not much. Nothing. What more is in Document No. 2 which you handed us this morning which is not in the pamphlet which you gave all the members last week and from which I read, with the exception of perhaps specific sites and details? Nothing.

Dr. Reichelderfer. Mr. Congressman, the material contained in Document No. 2, the 13-page mimeographed paper which we gave you this morning represents services which must be included in the so-called 5-year plan. However, the 5-year plan goes far beyond what is provided in this mimeographed statement, Document No. 2.

Mr. Flood. That is a good statement. Now I understand. You stated it very well.

FUNDS REQUIRED FOR ADDITIONAL WEATHER SERVICE NEEDS

How much will it cost to execute and put into effect, beginning in fiscal year 1959, Document No. 2? How many dollars do you need to begin to do everything that Document No. 2 calls for beginning in this supplemental effective beginning in fiscal year 1959? How much do you need to begin on July 1, 1958, to execute Document No. 2 and, secondly, how much do you need to do more than that, to execute any additional parts of the pamphlet I referred to in fiscal year 1959? Don't be modest. If you do not know this morning, go back downtown and figure it out, and before this bill is marked up I want an intelligent figure of some kind.

Mr. Thomas. Mr. Flood, may I respectfully call your attention to the table on the last page which shows about $4.6 million for this year and $7.094 million for next year to do what you are suggesting.

Mr. Flood. Thank you, Mr. Chairman. I am going to ask that there be inserted at the end of my interrogation in the record the

so-called Document No. 2 which was presented to the committee this morning.

However, I do not believe that that figure answers my question. The $4 million and $7 million to which the chairman referred and which you reflect on the last page of Document No. 2 deal with the execution of Document No. 2.

Dr. REICHELDERFER. That is correct.

Mr. FLOOD. I am concerned, in addition to that, for fiscal year 1959 with those phases of the entire five parts of the system which should begin to be executed at once in fiscal year 1959. I persist and insist that you must ask for money, because if you do not, I shall get it some place else. I most certainly am going to propose it to this subcommittee, to the full committee, and on the floor, depending upon my success.

Dr. REICHELDERFER. This will take further study to provide that information.

Mr. FLOOD. That is all, Mr. Chairman.

Mr. THOMAS. Mr. Flood, you have rendered a very outstanding service, and we all are grateful to you for it.

Mr. FLOOD. That is the result of your leadership, nothing else.

Mr. BOW. Mr. Chairman, I wonder if the gentleman from Pennsylvania would not agree that with that document which he just asked be inserted in the record, perhaps the other one should go in, too.

Mr. FLOOD. Of course. Document No. 1, let us say. Thank you. Let us state it as Document No. 1 and Document No. 2. We shall understand that language for our purposes.

Mr. THOMAS. And for the record, too, I think the doctor deserves a lot of credit in presenting these two very fine documents.

Mr. BOW. Yes. I think they are quite important, Mr. Chairman.

(Off the record.)

(The documents referred to follow:)

DOCUMENT NO. 1

Increased costs requiring program reductions during period 1950–59

Appropriation 1950 (including supplemental)		$24,534,000
Increased cost to maintain 1950 level of employment and stations		9,612,000
Authorized program increases (at 1959 cost levels):		
Takeover of civil meteorological functions from military agencies	$2,800,000	
Severe storm research	2,000,000	
Improvements in severe storm warning services	3,800,000	
Operation and maintenance of new facilities	1,700,000	
		10,300,000
New costs other than program increases:		
Retirement	1,583,000	
Social security	9,000	
Employee life insurance	85,000	
Overseas home leave	60,000	
		1,737,000
Total		46,183,000
Amount appropriated for 1959		39,318,000
Net increased cost which has been absorbed by program reductions		6,865,000

NOTE.—All 1959 cost data exclude the recent pay increase.

Estimated cost of 1950 program at 1959 cost rates

	1950	1959
01 Personal services:		
Full time, 4,373 man-years:		
1950 rate, $4,119 per man-year	$18,012,134	
1959 rate, $6,090 per man-year (increase 47.9 percent)		$26,631,600
Part time:		
1950 rate	356,875	
1959 rate (average increase, 43 percent)		510,300
Total personal services	18,369,009	27,141,900
02 Travel:		
1950 rate	429,311	
1959 rate (per diem increased from $6 to $12; fares increased average 32 percent)		776,500
03 Transportation of things:		
1950 rate	549,154	
1959 rate (number of helium cylinders increased 15 percent due to ICC safety regulations; freight-rate increases average 24 percent)		729,000
04 Communication services:		
1950 rate	1,061,163	
1959 rate (long lines increased 17 percent; tolls, 31 percent; local service, 44 percent)		1,201,200
05 Rents and utility services:		
1950 rate	585,648	
1959 rate (average increase 10 percent IBM machines, 41 percent other)		764,000
06 Printing and reproduction:		
1950 rate	176,149	
1959 rate (increase 28 percent)		225,500
07 Other contractual services:		
1950 rate	322,993	
1959 rate (average increase 23 percent)		397,000
08 Supplies and materials:		
1950 rate	2,497,000	
1959 rate (increase $2 each on 64,000 radiosondes; 36 cents each on 64,000 balloons; other supplies average increase 34 percent)		3,061,000
09 Equipment:		
1950 rate	475,630	
1959 rate (increase 29 percent)		613,550
Objects 10 through 13 (increase not computed):		
1950 rate	22,953	
1959 rate		22,950
Deduction for subsistence charges	31,591	31,600
Net direct obligations, 1950	24,457,419	
Unobligated balance	76,581	
Appropriation, including supplemental of $355,000	24,534,000	
Cost of same program at 1959 rates		34,901,000
Adjustments:		
Ocean ship weather program transferred to Navy		−700,000
Leases transferred to GSA (net)		−55,000
Cost of adjusted 1950 program at 1959 rates		34,146,000
1950 appropriation amount		24,534,000
Increased cost to maintain 1950 level of employment and stations		9,612,000

NOTE.—All 1959 cost data exclude the recent pay increase.

DOCUMENT No. 2

1. High altitude forecasts for international flights

The Weather Bureau now provides service for international flights for the airspace between the surface and the 20,000-foot level. Forecast and flight briefing services above the 20,000-foot level to keep pace with increased jet flights will require the addition of forecaster personnel to analyze and study the current conditions and to prepare separate forecasts of winds, temperatures, and weather at many levels up to 45,000 feet for specific periods of 6, 12, 18, 24, and 36 hours ahead.

The establishment of a new forecast center at every major jet terminal and international terminal would be extremely costly. The requirement could be met by concentrating the forecasting work at seven locations. A communications facility would be required to carry these forecasts to all major jet terminals.

This program will require 2 forecasters and a communicator on duty at all times (15 positions) at each of the 7 locations listed plus supporting service personnel.

High altitude forecast centers:	*Area served*
Washington, D. C. (NAWAC)	Domestic United States
New York (Idlewild), N. Y.	North Atlantic
Miami, Fla.	Gulf of Mexico and Western Caribbean
San Francisco, Calif.	Eastern North Pacific
Honolulu, T. H.	Western North Pacific
Anchorage, Alaska	Alaskan-Polar
San Juan, P. R.	Eastern Caribbean

Financial requirements, fiscal year 1959

	Forecast centers	Supporting services	Total
Personal services:			
Positions	105	18	123
Average employment	52.5	9.0	61.5
Cost	$375,700	$44,800	$420,500
Other objects	613,800	81,700	695,500
Total	989,500	126,500	1,116,000

2. Continuous weather warning broadcasts for pilots

This program will provide for continuous radio broadcasts to pilots of existing weather conditions plus information as to hazardous weather conditions which are expected to develop during the ensuing 6 to 12 hours. The 88 CAA L/MF ranges will be utilized to transmit the weather information. In this way pilots will be able to obtain required aviation weather briefing service without recourse to crowded telephone channels.

Weather Bureau requirements consist of 3 forecasters at each of the 25 flight advisory weather service centers: 4 forecasters and 16 technical assistants at the National Severe Weather Forecasting Center at Kansas City and 1 employee for each of the 87 L/MF range broadcasting stations, yet to be implemented, plus 10 employees for supporting services.

Some additional communication links are needed to carry the text of the broadcast from the Weather Bureau to the CAA communication station.

Financial requirements, fiscal year 1959

Personal services: (192 positions; 59.4 man-years)	$394,400
Other objects	252,600
Total	647,000

L/MF RANGES WHICH WILL MAKE CONTINUOUS WEATHER BROADCASTS FOR PILOTS

1. Albuquerque, N. Mex.
2. Amarillo, Tex.
3. Arcola, Va. (already activated)
4. Atlanta, Ga.
5. Big Spring, Tex.
6. Billings, Mont.
7. Birmingham, Ala.
8. Bismarck, N. Dak.
9. Blythe, Calif.
10. Boise, Idaho
11. Boston, Mass.
12. Brownsville, Tex.
13. Burlington, Vt.
14. Casper, Wyo.
15. Charleston, S. C.
16. Chicago, Ill.
17. Cincinnati, Ohio
18. Cleveland, Ohio
19. Delta, Utah
20. Denver, Colo.
21. Detroit, Mich.
22. Duluth, Minn.
23. Elko, Nev.
24. Elmira, N. Y.
25. El Paso, Tex.
26. Fargo, N. Dak.
27. Fresno, Calif.
28. Fort Worth, Tex.
29. Garden City, Kans.
30. Grand Marais, Mich.
31. Great Falls, Mont.
32. Houghton, Mich.
33. Houston, Tex.
34. Idaho Falls, Idaho
35. Idlewild, N. Y.
36. Indianapolis, Ind.
37. Jackson, Miss.
38. Jacksonville, Fla.
39. Kansas City, Mo.
40. Knoxville, Tenn.
41. Las Vegas, Nev.
42. Los Angeles, Calif.
43. Medford, Oreg.
44. Memphis, Tenn.
45. Miami, Fla.
46. Miles City, Mont.
47. Millinocket, Maine
48. Milwaukee, Wis.
49. Minneapolis, Minn.
50. Missoula, Mont.
51. Moline, Ill.
52. Nashville, Tenn.
53. Neah Bay, Wash.
54. New Orleans, La.
55. North Platte, Nebr.
56. Oakland, Calif.
57. Ogden, Utah
58. Oklahoma City, Okla.
59. Omaha, Nebr.
60. Pendleton, Oreg.
61. Pensacola, Fla.
62. Pittsburgh, Pa.
63. Portland, Oreg.
64. Pueblo, Colo.
65. Raleigh, N. C.
66. Rapid City, S. Dak.
67. Red Bluff, Calif.
68. Redmond, Oreg.
69. Reno, Nev.
70. Roanoke, Va.
71. Rock Springs, Wyo.
72. San Antonio, Tex.
73. St. Louis, Mo.
74. Sault Ste. Marie, Mich.
75. Seattle, Wash.
76. Sioux Falls, S. Dak.
77. Spartanburg, S. C.
78. Springfield, Mo.
79. Spokane, Wash.
80. Tampa, Fla.
81. Texarkana, Ark.
82. Tonopah, Nev.
83. Traverse City, Mich.
84. Tucson, Ariz.
85. Tulsa, Okla.
86. Whitehall, Mont.
87. Wichita, Kans.
88. Winslow, Ariz.

3. Restoration of aviation forecost briefing services

During the past year services to aviation have been curtailed at 72 active airport weather stations due to dropping of positions and holding other positions vacant. In order to meet minimum aviation weather service needs restoration of personnel at the following locations is essential:

Abilene, Tex.
Albany, N. Y.
Albuquerque, N. Mex.
Amarillo, Tex.
Anchorage, Alaska.[1]
Annette, Alaska
Atlanta, Ga.
Baltimore, Md.
Birmingham, Ala.
Bismarck, N. Dak.
Boise, Idaho
Boston, Mass.
Brownsville, Tex.
Buffalo, N. Y.
Burbank, Calif.
Burlington, Vt.
Chattanooga, Tenn.
Charlotte, N. C.
Cheyenne, Wyo.
Columbus, Ohio.
Dayton, Ohio.
Denver, Colo.
Des Moines, Iowa
Dodge, City, Kans.
Fargo, N. Dak.
Flint, Mich.
Fort Worth, Tex.
Grand Junction, Colo.
Grand Rapids, Mich.
Goodland, Kans.
Great Falls, Mont.
Harrisburg, Pa.
Indianapolis, Ind.
Jackson, Miss.
Juneau, Alaska
Knoxville, Tenn.
Lake Charles, La.
Little Rock, Ark.
Los Angeles, Calif.[1]
Miami, Fla.
Midland, Tex.
Milwaukee, Wis.
Minneapolis, Minn.
Montgomery, Ala.
New Orleans, La.
New York City, N. Y.[2]
Norfolk, Va.
North Platte, Nebr.
Omaha, Nebr.
Pendleton, Oreg.
Peoria, Ill.
Philadelphia, Pa.[1]
Port Arthur, Tex.
Portland, Oreg.
Rapid City, S. Dak.
Roanoke, Va.
Rochester, N. Y.
Salem, Oreg.
Salt Lake City, Utah
San Antonio, Tex.
Sault Ste. Marie, Mich.
Seattle, Wash.
Shreveport, La.
South Bend, Ind.
Springfield, Ill.
Syracuse, N. Y.
Toledo, Ohio
Topeka, Kans.
Tucson, Ariz.
Waco, Tex.
Wichita, Kans.
Yakima, Wash.

[1] Addition of 2 employees required.
[2] Addition of 3 employees required.

Financial requirements, fiscal year 1959

Personal services: 77 positions; 46.2 man-years	$291,800
Other objects	92,400
Total	384,200

4. Provide 24-hour-a-day aviation weather observations at high-activity airports

At 57 locations in the United States the Weather Bureau airport station is now operated on a part-time basis (less than 24 hours each day). Lack of weather reports during the hours the station is closed and the unavailability of aviation weather briefing services poses a severe handicap to pilots and to other users of weather service such as farmers, businessmen, etc.

To permit extension of operations to the full 24-hour period at the 26 highest priority domestic locations additional staff requirements are:

Station	*Additional staff required*	*Station*	*Additional staff required*
1. Wilmington, N. C	2	14. Eugene, Oreg	2
2. Bridgeport, Conn	3	15. Norfolk, Nebr	1
3. Bristol, Tenn	3	16. Yuma, Ariz	1
4. Spartanburg, S. C	5	17. Burlington, Iowa	3
5. Erie, Pa	6	18. Bishop, Calif	2
6. Waterloo, Iowa	4	19. Florence, S. C	4
7. Williamsport, Pa	1	20. Rome, Ga	3
8. Muskegon, Mich	3	21. Prescott, Ariz	3
9. Worcester, Mass	4	22. Victoria, Tex	3
10. Lynchburg, Va	3	23. Sheridan, Wyo	1
11. Roswell, N. Mex	3	24. Columbus, Ga	2
12. Key West, Fla	2	25. Flagstaff, Ariz	3
13. Meridian, Miss	3	26. Laredo, Tex	1

Financial requirements, fiscal year 1959

Personal services: 71 positions; 42.6 man-years	$269,000
Other objects	85,200
Total	354,200

To provide for recruitment of new employees only the most urgent cases are presented above.

5. *Automatic aviation telephone forecasts*

Increasing aviation operations during the past few years have resulted in a steadily increasing number of telephone calls from pilots to Weather Bureau stations for weather information prior to takeoff. Only one public telephone line is maintained at each Weather Bureau station. This line is so often busy with calls from radio, television, newspaper, agricultural, business, and other interests, that a separate unlisted telephone for exclusive use of aviation interests has been installed at all high-activity airport weather stations. In the larger cities this single aviation telephone also is so busy that pilots no longer can reach the Weather Bureau to obtain briefing service before takeoff.

An automatic answering aviation telephone device has been in operation at Washington National Airport for several years and has proved to be of immense help in getting aviation weather forecast information to pilots. An aviation weather forecast, up to 1 minute in length, is recorded by the forecaster on equipment located in the weather office. This forecast describes current local conditions, changes expected for the next 6 to 12 hours and weather on air routes to cities 200 to 300 miles distant. Two unlisted telephone lines hook into the recording equipment so that two pilots may obtain weather briefing simultaneously.

To provide this service at the 50 highest aviation activity airports in the United States will require the addition of 1 forecaster at each station and the necessary recording equipment.

1. Chicago, Ill. (Midway)
2. Los Angeles, Calif.
3. New York (LaGuardia)
4. Dallas, Tex.
5. Washington, D. C.
6. Miami, Fla.
7. Albuquerque, N. Mex.
8. Atlanta, Ga.
9. St. Louis, Mo.
10. Detroit, Mich. (Willow Run)
11. New York (Idlewild)
12. Kansas City, Mo.
13. Cleveland, Ohio
14. Honolulu, T. H.
15. Minneapolis, Minn.
16. Oakland, Calif.
17. Denver, Colo.
18. Houston, Tex.
19. Phoenix, Ariz.
20. Boston, Mass.
21. Tulsa, Okla.
22. San Francisco, Calif.
23. Pittsburgh, Pa. (Greater)
24. Newark, N. J.
25. Philadelphia, Pa.
26. Memphis, Tenn.
27. Birmingham, Ala.
28. Burbank, Calif.
29. Columbus, Ohio.
30. Charleston, S. C.
31. El Paso, Tex.
32. Jacksonville, Fla.
33. Wichita, Kans.
34. Milwaukee, Wis.
35. Knoxville, Tenn.
36. San Antonia, Tex.
37. Tallahassee, Fla.
38. Nashville, Tenn.
39. Salt Lake City, Utah.
40. Indianapolis, Ind.
41. Charlotte, N. C.
42. Dayton, Ohio.
43. Fort Worth, Tex. (Carter)
44. Portland, Oreg.
45. Louisville, Ky. (Standiford)
46. Jackson, Miss.
47. Oklahoma City, Okla.
48. West Palm Beach, Fla.
49. Savannah, Ga.
50. Cincinnati, Ohio (Covington)

Financial requirements, fiscal year 1959

Personal services: 52 positions, 39 man-years	$242,900
Other objects	115,100
Total	358,000

6. As requested, there follows in order of priority, the list of airports meeting criteria for establishment of new aviation weather reporting stations

1. White Plains, N. Y.
2. Teterboro, N. J.
3. Fort Worth, Tex. (Meacham)
4. Pittsburgh, Pa. (Allegheny County)
5. Newport News, Va.
6. Reading, Pa.
7. Elmira, N. Y.
8. Bedford, Mass.
9. Battle Creek, Mich.
10. Hutchinson, Kans.
11. Lafayette, La.
12. Huntington, W. Va.
13. Tyler, Tex.
14. Johnstown, Pa.
15. Terre Haute, Ind.
16. Pensacola, Fla.
17. Cedar Rapids, Iowa
18. Santa Barbara, Calif.
19. Monroe, La.
20. Wheeling, W. Va.
21. Hot Springs, Ark.
22. Westfield, Mass.
23. Ogden, Utah
24. Bluefield, W. Va.
25. O'Neil, Nebr.
26. Provo, Utah
27. McAllen, Tex.
28. Twin Falls, Idaho
29. Cumberland, Md.
30. Greenville, Miss.
31. Durango, Colo.
32. Rhinelander, Wis.
33. Wenatchee, Wash.
34. Worland, Wyo.
35. Paris, Tex.
36. Price, Utah

Financial requirements, fiscal year 1959

Cost of establishing each station $60,000

7. Communications facilities

A. A basic requirement at any Weather Bureau airport station engaged in furnishing pilots with weather information is current maps of existing weather conditions at the surface and extending up to levels of 20,000 feet and higher. In order to provide such maps without the need for laborious hand plotting and duplication of analysis work, the national weather facsimile network has been established. The fundamental maps are plotted once and analyzed by highly skilled meteorologists at the National Meteorological Center at Suitland, Md. Each map is then transmitted by facsimile to all weather stations on the national facsimile network.

The following Weather Bureau stations which now lack this important facility and thus have inadequate weather maps available for aviation weather briefing and forecasting services, should be provided with connections to the national circuit.

FACSIMILE INSTALLATIONS REQUIRED AT WEATHER BUREAU AIRPORT STATIONS HAVING AT LEAST 24,000 AIRCRAFT OPERATIONS PER YEAR

1. Charlotte, N. C.
2. Cincinnati, Ohio
3. Sacramento, Calif.
4. Montgomery, Ala.
5. Orlando, Fla.
6. Syracuse, N. Y.
7. Lubbock, Tex.
8. Rochester, N. Y.
9. Fort Wayne, Ind.
10. Chattanooga, Tenn.
11. South Bend, Ind.
12. Lexington, Ky.
13. Charleston, W. Va.
14. Colorado Springs, Colo.
15. Winston-Salem, N. C.
16. Greensboro, N. C.
17. Sioux City, Iowa
18. Columbia, S. C.
19. Youngstown, Ohio
20. Albany, N. Y.
21. Baton Rouge, La.
22. Akron, Ohio
23. Waco, Tex.
24. Moline, Ill.
25. Wichita Falls, Tex.
26. Bakersfield, Calif.
27. Boise, Idaho
28. Grand Rapids, Mich.
29. Casper, Wyo.
30. Rochester, Minn.
31. Billings, Mont.
32. Peoria, Ill.
33. Allentown, Pa.
34. Roanoke, Va.
35. San Angelo, Tex.
36. Wilmington, N. C.
37. Bridgeport, Conn.
38. Augusta, Ga.
39. Fort Smith, Ark.
40. Daytona Beach, Fla.
41. Bristol, Tenn.
42. Evansville, Ind.
43. Springfield, Mo.
44. Spartanburg, S. C.
45. Burlington, Vt.
46. Binghamton, N. Y.
47. Pueblo, Colo.
48. Wilkes-Barre, Pa.
49. Green Bay, Wis.
50. Williamsport, Pa.
51. Muskegon, Mich.
52. Fargo, N. Dak.
53. Grand Junction, Colo.
54. Lynchburg, Va.
55. Waterloo, Iowa

Financial requirements, fiscal year 1959

Fiscal year 1959 cost---------- $285,300

B. Inadequate means now exist for dissemination of weather reports from the Weather Bureau office to the CAA tower and other aviation operations offices at many airports. Tel-autograph equipment permits the instantaneous delivery of weather reports to those users at the airport having a vital need for this information. The observer writes the current weather conditions on a transmitting pad and it is received simultaneously at each receiving drop.

At the following 96 locations it is essential that the Weather Bureau install transmitting tel-autograph equipment, and in line with agreements between the CAA and the Weather Bureau, a receiver is placed in each tower. Other users, such as airlines, pay the cost for receivers in their offices.

AIRPORT WEATHER BUREAU STATIONS REQUIRING TEL-AUTOGRAPH EQUIPMENT

1. Los Angeles, Calif.
2. Dallas, Tex.
3. Miami, Fla.
4. Albuquerque, N. Mex.
5. Oakland, Calif.
6. Phoenix, Ariz.
7. San Francisco, Calif.
8. Memphis, Tenn.
9. Burbank, Calif.
10. El Paso, Tex.
11. Jacksonville, Fla.
12. Tallahassee, Fla.
13. Salt Lake City, Utah
14. Charlotte, N. C.
15. Dayton, Ohio
16. Portland, Oreg.
17. Jackson, Miss.
18. Oklahoma City, Okla.
19. West Palm Beach, Fla.
20. Savannah, Ga.
21. San Diego, Calif.
22. Des Moines, Iowa
23. Sacramento, Calif.
24. Tampa, Fla.
25. Little Rock, Ark.
26. Montgomery, Ala.
27. Orlando, Fla.
28. Austin, Tex.
29. Hartford, Conn.
30. Lubbock, Tex.
31. Raleigh, N. C.
32. Las Vegas, Nev.
33. Fort Wayne, Ind.
34. Amarillo, Tex.
35. Chattanooga, Tenn.
36. Midland, Tex.
37. South Bend, Ind.
38. Springfield, Ill.
39. Lexington, Ky.
40. Tucson, Ariz.
41. Mobile, Ala.
42. Brownsville, Tex.
43. Port Arthur, Tex.
44. Boeing Field, Seattle, Wash.
45. Winston-Salem, N. C.
46. Greensboro, N. C.
47. Fresno, Calif.
48. Sioux City, Iowa
49. Providence, R. I.
50. Seattle, Wash.
51. Columbia, S. C.
52. Reno, Nev.
53. Sioux Falls, S. Dak.
54. Baton Rouge, La.
55. Topeka, Kans.
56. Corpus Christi, Tex.
57. Greenville, S. C.
58. Waco, Tex.
59. Shreveport, La.
60. Moline, Ill.
61. Abilene, Tex.
62. Wichita Falls, Tex.
63. Bakersfield, Calif.
64. Boise, Idaho
65. Great Falls, Mont.
66. Grand Rapids, Mich.
67. Flint, Mich.
68. Casper, Wyo.
69. Rochester, Minn.
70. Billings, Mont.
71. Detroit (Wayne Major)
72. Peoria, Ill.
73. Allentown, Pa.
74. Yakima, Wash.
75. San Angelo, Tex.
76. Wilmington, N. C.
77. Bridgeport, Conn.
78. Augusta, Ga.
79. Fort Smith, Ark.
80. Daytona Beach, Fla.
81. Bristol, Tenn.
82. Evansville, Ind.
83. Springfield, Mo.
84. Spartanburg, S. C.
85. Binghamton, N. Y.
86. Pueblo, Colo.
87. Wilkes-Barre, Pa.
88. Muskegon, Mich.
89. Worcester, Mass.
90. Portland, Maine
91. Lynchburg, Va.
92. Columbus, Ga.
93. Medford, Oreg.
94. Detroit-Michigan City Airport
95. Cheyenne, Wyo.
96. Pocatello, Idaho

Financial requirements, fiscal year 1959

96 stations times $1,000	$96,000

8. Completing upper air observing network for continental United States

In the United States there are currently 63 Weather Bureau stations that take soundings of upper atmospheric weather conditions to the 70,000-foot level. Of these, only 19 make these soundings 4 times each day (at midnight, 6 a. m., noon, and 6 p. m.). The remaining 44 make the soundings only twice each day (at 6 a. m. and 6 p. m.).

The Meteorology Subcommittee of the Air Coordinating Committee has strongly recommended that all stations meet the minimum requirement of four soundings each day in direct support of improved weather forecasts for aviation operations. To accomplish this it would be necessary to add 3 employees at each of the 44 stations and to purchase the additional supplies of balloons and instruments used in making the soundings.

The recommendation from ACC also urges the setting up of two new sounding stations at Charleston, W. Va., and Winslow, Ariz., to fill large gaps in the present network. Seven employees will be required at each location.

Locations where soundings would be increased are shown in the attachment.

Financial requirements, fiscal year 1959

Personal services: 153 positions; 73 man-years	$381,100
Other objects	1,075,900
Total	1,457,000

Completing ACC/MET upper air observing network for continental United States

Station	*Additional staff required*	*Station*	*Additional staff required*
Albany, N. Y	3	Las Vegas, Nev	3
Albuquerque, N. Mex	3	Little Rock, Ark	3
Athens, Ga	3	Medford, Oreg	3
Bismarck, N. Dak	3	Miami, Fla	3
Boise, Idaho	3	Midland, Tex	3
Brownsville, Tex	3	Nantucket, Mass	3
Burrwood, La	3	Nashville, Tenn	3
Cape Hatteras, N. C	3	North Platte, Nebr	3
Caribou, Maine	3	Oakland, Calif	3
Charleston, S. C	3	Omaha, Nebr	3
Charleston, W. Va	7	Winslow, Ariz	7
Columbia, Mo	3	Pittsburgh, Pa	3
Dodge City, Kans	3	Rapid City, S. Dak	3
El Paso, Tex	3	St. Cloud, Minn	3
Ely, Nev	3	Salem, Oreg	3
Flint, Mich	3	San Antonio, Tex	3
Glasgow, Mont	3	San Diego, Calif	3
Grand Junction, Colo	3	Santa Maria, Calif	3
Green Bay, Wis	3	Spokane, Wash	3
Greensboro, N. C	3	Tampa, Fla	3
Jackson, Miss	3	Tatoosh Island, Wash	3
Jacksonville, Fla	3	Winnemucca, Nev	3
Lake Charles, La	3		
Lander, Wyo	3	46 stations	146

Summary of additional aviation weather service needs

Program items	Fiscal year 1959 costs					Fiscal year 1960 recurring costs				
	Position	Man-years	Personal services	Other objects	Total	Position	Man-years	Personal services	Other objects	Total
1. High altitude forecasts for international flights	123	61.5	$420,500	$695,500	$1,116,000	123	123.0	$774,900	$496,100	$1,271,000
2. Continuous weather warning broadcasts for pilots	192	59.4	394,400	252,600	647,000	192	192.0	1,295,000	391,500	1,686,500
3. Restoration of aviation forecast briefing services	77	46.2	291,800	92,400	384,200	77	77.0	486,300	77,000	563,300
4. Provide 24-hour a day aviation weather observations at high activity airports	71	42.6	269,000	85,200	354,200	71	71.0	448,400	71,000	519,400
5. Automatic aviation telephone forecasts	52	39.0	242,900	115,100	358,000	52	52.0	323,900	107,000	430,900
6. Establishment of new aviation weather stations	(1)	(1)	(1)	(1)	(1)	(1)	(1)	(1)	(1)	(1)
7. Communications facilities				381,300	381,300				449,100	449,100
8. Completing upper air observing network for Continental U. S	153	73.0	381,100	1,075,900	1,457,000	153	153.0	824,600	1,349,400	2,174,000
Subtotal, excluding item 6	668	321.7	1,999,700	2,698,000	[1] 4,697,700	668	668.0	4,153,100	2,941,100	7,094,200

[1] Each new station established will require 6 positions and $60,000.

Mr. THOMAS. Mr. Bow, you may interrogate the doctor at this point.

INTERNATIONAL COMMITMENT TO PROVIDE HIGH-ALTITUDE REPORTING

Mr. BOW. Doctor, following the interrogation of Mr. Flood, somewhat along the same line, I am quite concerned about this entire matter. I should like to ask you if you do not agree on this question of the high-altitude forecasts for international flights. I brought it out the other day, but I think it should be emphasized that this Government in 1950 made an international commitment with other nations that we would provide this high-altitude forecast; is that correct?

Dr. REICHELDERFER. That is correct, Mr. Bow.

Mr. BOW. In failing to do so, we may be embarrassed by not carrying out our international commitments.

Dr. REICHELDERFER. Yes; that assumption is correct. Of course, this is part of the general agreement, internationally, that the nations concerned, the nations belonging to ICAO, will exchange information and participate in providing the global service. It is quite true that, if the United States does not carry its share under the terms of the ICAO agreements, it would not place us in a very favorable light.

Mr. BOW. Whereas we have turbulence in the lower levels which our aircraft meet, nevertheless, the turbulence at high altitudes encountered by jetplanes, perhaps, becomes even more dangerous because of the extreme speed of aircraft flying in turbulent weather.

Dr. REICHELDERFER. Because of the extreme speed and because there are no visible evidences. Lower down, clouds indicate there will be turbulence. You do not have clouds to indicate this at high altitude.

Mr. BOW. I think that is important, Doctor. In flying at high levels, you do not have clouds. You hit areas of severe turbulence which cannot be seen; is that correct?

Dr. REICHELDERFER. That is correct.

Mr. BOW. Radar on airplanes would not pick that up, would it?

Dr. REICHELDERFER. It is not possible for any radar so far developed to show it.

Mr. BOW. The great speedof jet aircraft flying in turbulent weather causes a hazard because of that speed.

Dr. REICHELDERFER. Yes, sir.

USE OF EQUIPMENT CONSTRUCTED PRIOR TO 1900 AT TOLEDO WEATHER BUREAU

Mr. BOW. Doctor, I received a telegram some weeks ago from Mr. R. A. Stranahan, Jr., president of the Champion Spark Plug Co. I wish to read it to you and ask you to comment upon it. It says:

> Weather Bureau appropriation for the past 10 years completely inadequate for the increased needs of this important Bureau. We cannot rationalize Weather Bureau staff reductions and fewer forecasts when considering the thousands of new boats and airplanes in need of this service. Have need for practical disaster warnings with no appropriation for significant research. Toledo Weather Bureau using some equipment built before year 1900 certainly indicates the need for your attention to the Weather Bureau problem.
>
> CHAMPION SPARK PLUG CO.,
> R. A. STRANAHAN, JR., *President.*

Would you care to comment on that?

Dr. REICHELDERFER. The figures we have given you in the two mimeographed documents this morning certainly show that we feel we have fallen behind on requirements. As stated in the record already, we think the situation has reached the crucial stage.

Mr. BOW. Do you know anything about equipment being built before 1900 being used in the Weather Bureau in Toledo? Is that something which is not usable today because of its age, or is it something which is just as valuable today as it was when it was first put in there?

Dr. REICHELDERFER. It certainly serves its purpose today, just as the old hall tree for hats and overcoats serves its purpose. I think what he refers to is the so-called triple register, which is a simple electrical means of recording wind direction and velocity and either sunshine or rainfall, sometimes both, in which case it is a quadruple register. This is a very simple and elementary type of instrument.

I am only being fair when I say I think, in practically all places where a modern type of instrument is necessary, we have furnished it for this particular purpose. However, the reference does illustrate—and I think he could have picked out much better examples—that our equipment is not up to modern standards in many respects.

Mr. BOW. But in this particular instance the age is not particularly damaging to the equipment.

Dr. REICHELDERFER. I think not; no.

Mr. BOW. Is it not a fact, that, back in 1956, Doctor, we actually went above the budget estimate?

Dr. REICHELDERFER. Yes. The Congress, in view of the severe damage caused by the hurricanes, gave us very substantial increases for research.

Mr. BOW. And the budgets have been pretty substantial since that time. That year we had $41,650,000, as compared to the figure $24,750,000 the year before. We have stayed pretty well at that level.

Dr. REICHELDERFER. Yes.

DISCUSSION OF BUDGET RESTRICTIONS ON AVIATION WEATHER SERVICE

Mr. BOW. Doctor, have you examined this special report put out by the National Business Aircraft Association?

Dr. REICHELDERFER. No; I have not seen it, sir.

Mr. BOW. Part of it says that—

> The Weather Bureau has been historically unable to obtain funds to properly support aviation weather service. Weather Bureau budget requests are reviewed and cut by the Department of Commerce, the Bureau of the Budget, and the Congress.

Of course, there is some semblance of truth in that, but, as I have pointed out, there have been occasions when this Committee has gone over the budget.

Mr. THOMAS. Would you let me interrupt? Is that the organization that my distinguished friend, Mr. Zimmerman, of Continental Oil, belongs to?

Mr. BOW. Yes, your friend Mr. Zimmerman is one of the board of directors, and I find some very distinguished Ohioans also in this group. I do not know whether there are any from the State of

Washington, but of course there are distinguished gentlemen from Washington.

Mr. HORAN. The Boeing Jetliner organization is a member.

Mr. BOW. They set forth in this special bulletin a number of staff reductions, and they say it is because the Congress has refused to appropriate the money.

Here is one statement:

New Weather Bureau stations. Plans to establish a full-time Weather Bureau observing and pilot briefing office at O'Hare International, Chicago, and the municipal airport at Long Beach, Calif., were dropped because of budget restrictions.

Is that a true statement?

Dr. REICHELDERFER. Yes, sir. This was in fiscal year 1958. They have been allowed this year.

Mr. BOW. We are going to have full-time Weather Bureau observing and pilot briefing at O'Hare, are we not?

Dr. REICHELDERFER. It is allowed in the 1959 estimates.

Mr. BOW. I shall not take the time of the committee to go through this entire statement, Doctor, but I shall submit it to you and ask you and your staff to review it and give me a report on it as to what items are correct and what are incorrect, and your observations regarding it.

However, there is one item which gives me some concern. This is purely a personal matter. They list the terminal forecasts as being reduced from 24-hour to 12-hour coverage. In this I find the Akron-Canton, Ohio, airport. Is it your intention to reduce the terminal forecasts from 24-hour to 12-hour coverage?

Dr. REICHELDERFER. It is not our intention to reduce the coverage at the Akron Municipal Airport.

Mr. BOW. I am talking about Akron-Canton. There are two airports, the Akron municipal and then the joint county airport. I am interested in the Akron-Canton Airport.

Dr. REICHELDERFER. We are not reducing the hours of coverage for terminal forecasts at the Akron-Canton Airport.

Mr. BOW. Mr. Chairman, I shall give this special report to the doctor and ask his staff to review it.

I might say for the benefit of the gentleman from Illinois, Mr. Yates, that while he was answering the rollcall, I inquired of the doctor about the O'Hare Airport, and I find they will have a full-time Weather Bureau operation for briefing pilots.

Mr. YATES. I thank the gentleman. I was given that information and so advised the people in Chicago.

Mr. BOW. The report which I handed the doctor indicated there would not be, and I thought it well to bring out the fact that there would be.

Dr. REICHELDERFER. Would you like this reply, Mr. Congressman, in a letter direct to you?

Mr. BOW. I think it should come to the committee. We might want to make it a part of the record.

DONATIONS OF EQUIPMENT BY INDUSTRY AND COMMUNITIES

I am also interested in my Akron-Canton situation, and ask you how it has worked out. You probably will recall that at Akron-Canton we had no radar weather warning system. The Timken Roller Bearing Co., of Canton, Ohio, purchased, paid for completely, and turned over to the Weather Bureau a weather warning radar. How has that worked out?

Dr. REICHELDERFER. This is working out very well. I have not seen this installation myself. It has been a year and a half or 2 years since I visited the airport. This was a very fine thing for the company to do. Our official at the Akron-Canton Airport, Mr. Robinson, is using this equipment.

Mr. BOW. Would you object to other people in other areas of the country doing the same thing?

Dr. REICHELDERFER. This has been done in some other parts of the country. I believe we have at least one in Texas which was contributed by one of the oil companies.

Mr. FLOOD. Would the gentleman yield?

Mr. BOW. I yield.

Mr. FLOOD. Do I understand that it was necessary for a private company to acquire a radar for the purpose of helping the Weather Bureau guarantee meteorological forecasting?

Mr. BOW. Mr. Flood, some of these people are very much interested in cutting the cost of Government and its large appropriations. They felt some need for this. Inasmuch as they have aircraft of their own flying in and out of Akron-Canton and many other people are flying aircraft, they were perfectly willing to supply the United States Government with this radar warning system and turn it over to them to operate.

I merely suggest that perhaps there are others who have been crying for economy and talking about economy who might be willing also to make contributions of that kind to the Government.

Mr. YATES. Is this a tax-deductible item?

Mr. BOW. I have not checked with them whether it is or not.

Mr. FLOOD. It should be.

Mr. BOW. It is perfectly all right with me for them to do it. I think it shows a good public spirit if someone says we will do it because it has not been provided, and I think it has rendered an excellent service.

The fact of the matter is, it has given us a couple of tornado warnings which were very valuable to us.

Do you know any implications of the proposal of donations of this kind of equipment which would be bad?

Dr. REICHELDERFER. We have thought of that, Mr. Bow, but we believe we have it on a basis where there can be no objection to it. There were a good many, some 10 or 15, sets of radar equipment which have been modified through funds provided by local communities that wanted storm radar protection. These communities have also provided towers for installation of the radar. Otherwise, the Weather Bureau would not have been able to finance the installations.

There are other services in the Bureau where the cost is borne in a cooperative manner. I think you are familiar with the frost warning service in the West, where the growers or the grower organizations provide from 25 to 50 percent of the cost.

PERSONNEL REDUCTIONS IN THE WEATHER SERVICE

Mr. Bow. Doctor, I would like to ask this one question. Apparently there has been a very substantial reduction in staffing for aviation weather. Has there been a comparable reduction in other areas of the Weather Bureau?

Dr. Reichelderfer. It has been ever more severe. In many cases we have consolidated, have closed city offices serving the public directly. We are trying to serve both the public and aviation from airport stations now.

Mr. Bow. That is a natural thing to do; is it not?

Dr. Reichelderfer. Except that it has reduced, and in many cases eliminated, the Weather Bureau staff who answered requests made by people who came directly to our offices.

A case which comes to mind is lawyers or court officials who need records for testimony for court cases.

Mr. Bow. Are those records not still available?

Dr. Reichelderfer. They are available, but are more difficult to get.

Mr. Bow. It is just a question of going to the airport rather than to a downtown office to get it; is that not correct?

Dr. Reichelderfer. Yes.

Mr. Bow. The information is available.

Dr. Reichelderfer. But your question had to do with whether public service has been curtailed, and it already has been brought out that we are not able to answer the telephone because we do not have enough staff. So people who come for information of that kind to the airport may have to wait a long time before they get it. This applies also, of course, to inquiries from the press.

Mr. Flood. Will the gentleman yield again?

Mr. Bow. I yield.

DIFFERENCE IN RADAR USED BY WEATHER BUREAU AND CAA

Mr. Flood. I am concerned about this problem which you men from the Weather Bureau have with CAA on the use of radar. My information, as I understand, is that the same radar cannot be utilized at the same time for the same purposes or for different purposes by the Weather Bureau and CAA: that the reflection and determination or the exhibition of weather conditions on radar is of no interest to CAA, but is of great interest to you. What is the problem?

Dr. Reichelderfer. It goes further than that. We have tried to use CAA radar. In many places we have tried to use military radar. There are two general problems. In the first place, the radar in the one case is designed to cut out weather interferences, weather evidences, while we want to bring them up and show clouds, rain, and so on.

Mr. Flood. You mean we must have one system of radar for CAA for air transport purposes and another system of radar hardware for the Weather Bureau for meteorological purposes?

Dr. Reichelderfer. That is correct. The radar which we are purchasing under the authority of Congress for these 31 general installations throughout the country would not serve the purpose of air traffic control under the CAA.

Mr. Flood. You mean there are different kinds of radar? You have to build a radar for one purpose and then a different radar for another purpose—a different piece of hardware entirely?

Dr. Reichelderfer. Quite so.

Mr. Flood. Can you not put a button on it which you can push which will make it double in brass?

Dr. Reichelderfer. Not a device which can be simply switched. You have to change the circuit more or less completely.

Mr. Flood. I would like you to develop that for the record. I do not wish to take the time now. Will you have your technicians supply for the record at this point a memorandum on this question of the 2 types and kinds of radar, why 2 systems are necessary and why we cannot use 1 system with modifications for the 2 purposes?

(The information may be found in the appendix on page 1216.)

Dr. Reichelderfer. We shall. I would like to give the second reason very briefly.

When one is following a tornado or severe storm in the course of development, it is necessary for the radar observer to keep his eyes glued to the changes taking place from minute to minute. He may want to stop the radar and concentrate on that, or he may want to change it to a different power for weather purposes. This would interfere directly with the use of this radar at the same time for air traffic control, where the radar observer has to keep his eyes on the airplane.

Mr. Flood. Let me ask you this. The cockpit of a great new jet transport will be equipped with what kind of radar January 1, 1959? What will be in there? What will the black box be?

Dr. Reichelderfer. Originally, a radar to see other aircraft, but this radar can see enough about the general outline of storms to be used for meteorological purposes by the pilot.

Mr. Flood. Anything else you will transmit to him?

Dr. Reichelderfer. Yes.

Mr. Flood. Thank you.

Mr. Bow. Actually, the radar does storm warning, does it not, Doctor? It can see into the clouds and see turbulence or a cone shape and things of that kind which would give weather information in flight?

Dr. Reichelderfer. That is correct; yes.

Mr. Bow. Because the radar itself in picking up other aircraft is not of too much value at the speed jets will approach each other. By the time they are on the radar screen they probably will have passed them 5 miles.

Dr. Reichelderfer. The primary purpose of the radar in modern aircraft is to enable the pilot to avoid, to go around severe weather and turbulent clouds.

Mr. Bow. Rather than the observance of other aircraft in the air?

Dr. Reichelderfer. That is correct.

Mr. Bow. That is all.

Mr. Preston. Mr. Horan.

GOVERNMENT RESEARCH IN METEOROLOGY

Mr. Horan. I notice here an item of $2 million listed on the sheet which you gave us for severe storm research. The thought comes

to me, Dr. Reichelderfer, that it would be good for this committee to have Mr. Gleiter insert in the record at this point a statement telling us what all branches of the Government are doing by way of research.

Dr. REICHELDERFER. In meteorology?

Mr. HORAN. Yes; weatherwise, including in that the work which is being done by the military and some of the things which we are going by way of maintaining Arctic stations to study weather performances. We passed a bill a few days ago calling on the National Science Foundation to conduct certain types of research. The thought comes to me that if we are to consider intelligently any item in this field, we ought to know the entire scope of weather research, governmentwide.

Dr. REICHELDERFER. We shall furnish that information.

(The information may be found in the appendix on page 1216.)

USE OF FLYING LABORATORIES

Mr. HORAN. One other question comes to my mind, also. We have maintained quite a number of flying laboratories of the CAA. I was wondering why action might not be taken to include the Weather Bureau work in those flying laboratories, rather than have what might appear to be a certain duplication.

Dr. REICHELDERFER. We talked with Mr. Pyle, the Administrator, and, of course, he has said that the CAA would do everything it could to provide the weather information we want. However, once the aircraft are equipped with all of this extra apparatus for hurricane research and for penetrating close to tornadoes to find out what really makes them develop, you cannot do much else with the aircraft. The equipment takes up a great deal of space, and it is of little or no use for other types of study.

Mr. HORAN. You are saying, I assume, that the flying laboratories employed by the CAA are concerned largely with route work and the grid they are developing. I notice in your pamphlet you say at one point:

> The capabilities of CAA and Air Defense Command radars will be utilized to the fullest extent technically feasible to obtain practically nationwide weather surveillance of storm systems.

I assume you are going into that.

We are spending quite a bit on weather, Mr. Chairman, and I believe the amount supplied will be rather interesting. The job before this committee and one which concerns me personally, is that I would like to have this subcommittee know what is going on throughout the Government, weatherwise, so we can more intelligently appropriate and perhaps, be of some assistance in helping to achieve the maximum of coordination.

Mr. PRESTON. Would you yield for a question at this point?

Mr. HORAN. Surely.

Mr. PRESTON. Dr. Reichelderfer, are you familiar with the amounts being expended by other agencies of the Government, such as the Defense Department, Navy, Air Force, Army?

Dr. REICHELDERFER. Yes.

Mr. PRESTON. Let me also add, the Agriculture Department, the Bureau of Standards, the Department of the Interior in dealing with forest fires, or any other agency of the Government. Could you furnish those figures, so we might have a composite picture, as Mr. Horan has suggested?

Dr. REICHELDERFER. We have them available from time to time. I would have to obtain up-to-date figures.

Mr. PRESTON. Could you do that without entailing great cost?

Dr. REICHELDERFER. Yes.

Mr. PRESTON. We would like to do that. We would like that for the record.

Dr. REICHELDERFER. We shall try to give you a complete picture.

(The information may be found in the appendix on page 1216.)

Mr. HORAN. I was a little disturbed when this bill passed, but it was very popular, so it passed by quite a large margin. Of course, that brings the National Science Foundation into weather research. Personally, I would have preferred to have that done as an adjunct to the Weather Bureau, because I think you would have unified command that way. This way there will be two bureaus, which will have to work together if we are to get the maximum from the taxpayers' dollar.

Dr. REICHELDERFER. Mr. Congressman, we will work closely together. I can say that this question of possible duplication was discussed very thoroughly with representatives of the National Science Foundation. I am sure we can avoid duplication, because we do work closely together. There were some factors with which I believe you are familiar, involving commercial cloud-seeding experiments. This country has already spent, in the past 10 years, some astronomical figure, $10 million or $20 million, in cloud seeding.

(Off the record.)

Mr. HORAN. That is all, Mr. Chairman.

Mr. PRESTON. Thank you, Mr. Horan.

APPROPRIATIONS FOR SEVERE STORM RESEARCH AND WARNING SERVICES

During the hearings this morning, when your exhibits were discussed, Doctor, I had to be absent, attending another committee of the House. I have examined the first document showing the comparative costs between 1950 and 1959 due to certain changing conditions which you attribute as the cause for reducing the weather reporting and other services.

I should like to comment that I see in here about $5.8 million of the $6.8 million which really could provoke a debate here this morning with you as to whether you were compelled to do these things or whether you yielded to congressional pressure. If you yielded to congressional pressure, as I understand the record reveals here, that was a decision, of course, for you to make.

Under these circumstances, I think I would have said, "You get the Bureau of the Budget or you get the Commerce Department to get a supplemental request in here for this purpose and I will certainly support it," instead of just changing the emphasis of the program.

Do you wish to comment on that?

Mr. GLEITER. I would like to, Mr. Chairman, if I could. Are you referring to severe storm research, $2 million?

Mr. PRESTON. And improvements in severe storm warning services.

Mr. GLEITER. The large increase in severe storm research started in fiscal year 1956 when the expenditures went up, roughly $1 million. We did that because there was specifically written in the appropriation act the following——

Mr. PRESTON. Do you refer to the amendment offered on the floor?

Mr. GLEITER. No. This was the actual act as it was enacted, in which it says the Weather Bureau was given:

For salaries and expenses, $32 million, of which $4,250,000 shall be available only for the improvement and operation of hurricane, severe storm, and tornado warning services in the United States, including research related thereto.

Then there was a supplementary appropriation of $500,000 against a request from the Bureau of the Budget to the Congress for $3 million; $500,000 was appropriated, and the House committee, I believe, expressed the view that, of the research requirements for $3 million, the additional amount should be supported from the $4½ million increase provided in the regular bill.

Mr. PRESTON. In what fiscal year was that?

Mr. GLEITER. 1956.

Mr. PRESTON. You are using 1950 figures for comparative purposes?

Mr. GLEITER. That is right.

Mr. PRESTON. So, that was money specifically appropriated for these purposes.

Mr. GLEITER. That is right.

Mr. PRESTON. That was part of a considerable increase over the previous year. How much was the increase in 1956?

Mr. GLEITER. The increase in 1956 over 1955. I do not have the total figures here.

Mr. BOW. Will the chairman yield at that point? That was over the budget estimate.

Mr. GLEITER. The $4¼ million.

(Off the record.)

Mr. PRESTON. I will not belabor this point. This is a handy document which you prepared to show what is required to bring your present weather-reporting service up to what it should be today, including the upper air observing, which would require the figures which have been previously set out in the hearings this morning.

SUPPLEMENTAL REQUEST TO IMPROVE WEATHER REPORTING SERVICE

Have you requested of the Department of Commerce a supplemental request for fiscal 1959 for the amount shown in this document?

Dr. REICHELDERFER. We have not.

Mr. PRESTON. Are you prepared to do so?

Dr. REICHELDERFER. We certainly will discuss it with the Department.

Mr. PRESTON. Doctor, you want to give adequate service, do you not?

Dr. REICHELDERFER. Yes, sir.

Mr. PRESTON. You really do. You are deadly serious about this. You want to give adequate service.

Dr. REICHELDERFER. I have devoted my career to it.

Mr. PRESTON. Yes; you have, and you are the best known man and the best recognized authority in America on this subject. You certainly have a great reputation in the Nation as a weatherman.

Dr. REICHELDERFER. Thank you.

Mr. PRESTON. It is your wish to provide this sort of reporting, to provide this service. At whatever may be the risk, are you willing to go to the Commerce Department and say, "We are going to send this to Congress"?

Dr. REICHELDERFER. Certainly.

Mr. PRESTON. Now, Secretary Moore, what will your position be on this amount of money when it comes to your Office?

Mr. MOORE. We have never had this program presented to us, Mr. Chairman, up to this point. I first heard about this program on June 10. We will certainly seriously consider this program and go over the details carefully with the Weather Bureau.

Mr. PRESTON. There will be no disposition on the part of the Department of Commerce to chastise Dr. Reichelderfer for bringing this to your attention?

Mr. MOORE. No. We are just a wee bit embarrassed that he did not bring it to us at the time this proposal was made up in March.

Mr. PRESTON. You are talking about the 5-year program?

Mr. MOORE. The 5-year program is the one I am referring to.

Mr. PRESTON. Very well. If the committee is to consider this—and we are prepared to consider it very seriously as quickly as you can bring it to us in the form of a proper budget request—then let us get the ball rolling and see what can be done. Is that agreeable?

Mr. MOORE. It is completely agreeable with the Department.

Mr. PRESTON. Very well. If there are no further questions, that concludes the hearing.

Mr. HORAN. I would like to ask one general question. We, apparently, are not having hurricanes or the threat of them that we had for a period of years. Do you have any light on that?

Dr. REICHELDERFER. In sort of descriptive terms, yes. The position of the so-called Bermuda high and the winds over the Southeast and the Atlantic, the tropical portion of the Atlantic, have extended far west and have not had the discontinuity, the irregularities, that contribute to the formation of hurricanes.

To show you how much research is needed, some research meteorologists feel that the reason we have not had hurricanes is because the ocean temperatures have been lower than previously. It is easy to show that, if you have the oceans at a temperature of 85° F., the amount of vapor that they discharge into the atmosphere, and, therefore, the amount of energy that is available from the release of latent heat when there is condensation, is very much greater than when the temperature is only 65°. This may be a determining factor. We do not know.

Mr. HORAN. On the other hand, we have had some rather serious tornadoes in the midcontinent.

Dr. REICHELDERFER. Yes.

Mr. HORAN. Have you any light on that?

Dr. REICHELDERFER. The number of tornadoes this year, 1958, has been less than last year. There is some indirect evidence. The temperatures in the Gulf of Mexico have been lower, 5° or more lower

than usual. This means there has been less moisture in the air and less energy available for the development of severe convection.

This has a very interesting bearing on the proposal for increased rainfall by the rainmakers. This would increase the number of tornadoes. So these things need study.

Mr. HORAN. It is hard to get your thumb on it, is it not?

That is all, Mr. Chairman.

Mr. PRESTON. Thank you, gentlemen. That concludes the hearing on the Weather Bureau. It has been very interesting and, I think, a very helpful hearing.

Dr. REICHELDERFER. Thank you, Mr. Chairman.

TUESDAY, JULY 1, 1958.

NATIONAL BUREAU OF STANDARDS

PLANT AND EQUIPMENT

WITNESSES

GEORGE T. MOORE, ASSISTANT SECRETARY FOR ADMINISTRATION
OSCAR H. NIELSON, DEPARTMENTAL BUDGET OFFICER
DR. A. V. ASTIN, DIRECTOR, NATIONAL BUREAU OF STANDARDS
L. S. TAYLOR, CHIEF, ATOMIC AND RADIATION PHYSICS DIVISION
DR. I. C. SCHOONOVER, ASSOCIATE DIRECTOR FOR PLANNING
ROBERT S. WALLEIGH, ASSOCIATE DIRECTOR FOR ADMINISTRATION
N. L. CHRISTELLER, CHIEF, BUDGET DIVISION
FRED S. POORMAN, DEPUTY COMMISSIONER, PUBLIC BUILDINGS SERVICE
C. G. PALMER, DIRECTOR, ESTIMATES DIVISION, PUBLIC BUILDINGS SERVICE

Mr. PRESTON. The next item the committee will consider will be two items for the Bureau of Standards. The first item deals with "Plant and equipment," in the sum of $200,000. We shall insert in the record at this point pages 7, 8, and 9 of the justifications.

(The pages referred to follow:)

Plant and equipment

(H. Doc. 394)

Budget estimate, 1959	$600,000
Revised budget estimate	800,000
Request, needed July 1958	200,000

PURPOSE AND NEED FOR SUPPLEMENTAL FUNDS

The Bureau requests a supplemental appropriation of $200,000 for "Plant and equipment." This amount will provide funds for two urgent needs of the program.

Engineers and scientists working on the pilot electronic data processor received a pay raise effective December 29, 1957. This supplemental appropriation will provide $14,000 for the higher pay rates in 1959. No provision for this cost was made in the original "Plant and equipment" 1959 estimates, since the raises were not effective when those estimates were prepared.

The supplemental appropriation request will also provide $186,000 for urgently needed modifications to utility and plant facilities of the Bureau at the Washington site. Present exigent circumstances make it imperative that these needs be met at once to forestall costly failures in utility services.

JUSTIFICATION

The justification for supplemental funds will be discussed under two headings:

Pilot data processor

The Bureau's original 1959 request included $500,000 for near completion of the pilot data processor. The report of the House Appropriations Committee on the regular appropriation bill for 1959 indicates that the $500,000 should provide for completion of the data processor. The Bureau will make every effort to complete the computer system without requesting further funds, but it is not possible also to absorb the increased pay costs for the scientists working on this project.

Budgetary limitations during the 3 years of design and construction of the data processor have caused delays, readjustments, and increased total cost. Fortunately, the Bureau has been able to take advantage of certain technological developments to offset some of the increased costs. The remainder have been absorbed at some sacrifice of computer capability. In addition to increased cost of components, the Bureau has absorbed the increased salary cost in fiscal year 1958. It, therefore, appears impossible to complete the assembly and testing of components in 1959 without the supplemental appropriation of $14,000 to cover increased salary costs.

Washington laboratory modifications

Much of the $186,000 requested for modifications of the Washington laboratories is in the nature of an emergency request. It is necessary to take prompt action to avoid breakdowns in electric utility services. In several buildings, the electric distribution system has become overloaded as a result of increasing powerloads imposed by the complex equipment needed for modern research activities. To the extent possible, adjustments have been made to minimize the danger of interrupted service. Two major buildings, however, require emergency attention.

Approximately $130,000 is needed to provide additional transformer banks and some rewiring of the chemistry building and the materials-testing laboratory. The situation in these buildings has been developing for some time. The uncertainty about the timing of the relocation of the Bureau's Washington laboratories raised questions as to whether more extensive steps should be taken. In the context of plans to move during the next 4 or 5 years, the present proposal appears to be adequate, as well as more economical. It will provide for a moderate increase in capacity in the two most critical areas.

Immediate action, however, is quite critical. Further delay may result in costly breakdowns, as well as more expensive subsequent action.

The remainder of the supplemental appropriation would be used to increase the usefulness of existing facilities as an interim measure to provide necessary laboratory space until relocation takes place. For example, the recent termination of operations of the optical-glass plant releases for other uses an industrial-type building with about 23,000 square feet of space. The extension of laboratory utilities and installations of partitions will provide badly needed temporary laboratory space to relieve some of the current overcrowding. In terms of the benefits to Bureau programs, and, hence, to science and technology, this investment will more than pay for itself during the next 4 years.

It should be noted that these proposed expenditures differ somewhat from the items included in the "Facilities" activity of the regular 1959 appropriation. The regular budget includes $100,000 for minor capital improvements and construction for all NBS programs. It provides primarily for those minor changes in facilities which are needed for specific research programs but which must be separately budgeted as capital improvements. The items in the supplemental request, on the other hand, relate to the Washington laboratories only, and are larger emergency items which could not be included in the regular budget.

Mr. PRESTON. Doctor, have you a prepared statement on this item, or do you wish to make an oral statement?

Dr. ASTIN. I would like to make a few oral remarks relevant to the justification.

Mr. PRESTON. Very well; you may proceed.

Dr. ASTIN. The "Plant and equipment" item includes an amount of $56,000 to bring into being some much-needed new space at the National Bureau of Standards. During the past year we have closed out an operation we have conducted since World War I for the Department of Defense involving the making of optical glass. American industry has now reached the stage where it is no longer necessary for us to perform this service for the Defense Department, and because of this we closed out this operation.

This has made available a fairly large building which could be of great assistance in our laboratory program. In particular, it would be extremely helpful for doing some of the accelerated work in the field of high temperature which you earmarked especially in our appropriation for fiscal year 1959. Of this, $56,000 would be used to remove equipment now in that building and to arrange it so it would be suitable for laboratory use.

Another item of $130,000 in this appropriation request is to overcome a critical situation in our electrical distribution system. We have had a rapidly growing electrical load over the past several years, and we have recently checked the situation in some of the areas and found that the transformer banks supplying the power to two of our buildings are critically overloaded. It will cost an estimated $130,000 to replace these transformer banks. We are afraid that if this is not done, we might run into a very costly and difficult to overcome breakdown situation.

In addition, there is an item here which, in accordance with your request, should also be deferred, I suspect. It is a matter of $14,000 relevant to the top of grades in connection with the construction.

Mr. PRESTON. That is a total request of $186,000 under this justification.

Dr. ASTIN. That is correct.

One other item I should mention is a change in the requested language. Our present statutory authorization for improvements to our plant limits any specific project to $25,000 unless the appropriation language specifically permits us to exceed this. Since the two items we are requesting are both in excess of $25,000, the purpose of our request could not be implemented unless the specific exception were given.

Due to an oversight, we omitted including this language in our budget estimate.

Mr. PRESTON. This is legislation, is it?

Mr. CHRISTELLER. No, sir; this is a standard provision for exception to the limitation. The statute authorizing our improvements and construction work states that in the absence of an exception in the appropriation language, we are limited to $25,000. Normally this would have been included in the language without question.

Mr. PRESTON. Does the basic act provide that exceptions may be made?

Mr. CHRISTELLER. Yes, sir.

Mr. PRESTON. And heretofore they have been considered as not being legislation on an appropriation bill?

Mr. CHRISTELLER. Yes, sir; these are standard provisions within our act from year to year.

Mr. NEILSON. This matter has been discussed with the Bureau of the Budget, and has the concurrence and the approval of the Bureau.

Mr. PRESTON. Mr. Secretary, do you support these requests as stated by Dr. Astin?

Mr. MOORE. Indeed we do, sir.

Mr. PRESTON. Are there any questions, gentlemen?

(No response.)

Mr. PRESTON. Gentlemen, that will conclude the hearing this morning, because we plan to reconvene at 1:30 to take up the $3 million item.

AFTERNOON SESSION

Mr. PRESTON. The committee will come to order.

CONSTRUCTION OF FACILITIES

We will continue with the Bureau of Standards. The specific item under consideration is the new Gaithersburg facility which is described on page 12 of the justifications. We will insert that page into the record at this point, except the last paragraph, and also pages 20 and 21 of the justifications.

(The pages referred to follow:)

NATIONAL BUREAU OF STANDARDS

Construction of facilities

(H. Doc. 394)

Budget estimate, 1959	0
Revised budget estimate	$3,000,000
Request, needed July 1958	3,000,000

PURPOSE AND NEED FOR SUPPLEMENTAL FUNDS

The Bureau requests a supplemental appropriation of $3 million to finance detailed architectural and engineering designs for new facilities at Gaithersburg, Md., including the design of a high-intensity electron accelerator.

The accelerator is urgently required to provide critically needed radiation measurement standards and techniques to support the phenomenal growth of radiation technology. Design of this machine should be undertaken at the same time that the laboratory to house it is being designed.

Detailed architectural and engineering plans for the Gaithersburg site must be provided without further delay. The inadequate and outmoded facilities at Washington must be replaced at an early date in order to enable the Bureau to meet its statutory responsibilities in support of national progress in science and technology.

TABLE I.—*Estimates for replacement and new facilities*

Preliminary design study	$180,000
Replacement of existing facilities:	
Architect's first estimate	85,810,000
Reductions in planned facilities	—3,810,000
Total	82,000,000
Accelerator laboratory:	
Construction, equipment, and occupancy	4,700,000
Less: Radiation laboratory costs included in replacement estimate	—2,000,000
Total	2,700,000
Deadweight testing laboratory:	
5,000-pound deadweight machine	50,000
100,000-pound deadweight machine	150,000
300,000-pound deadweight machine	350,000
1,000,000-pound deadweight machine	1,150,000
Structural testing building	1,300,000
Total	3,000,000
Less:	
Equipment included in replacement estimates	—200,000
Construction cost in replacement estimates	—1,250,000
Total	1,550,000
Grand total	86,430,000
Initial appropriation: preliminary design and land acquisition	930,000
Proposed 1959 supplemental appropriation	3,000,000
Planned for later appropriation	82,500,000
Total	86,430,000

TABLE II.—*Estimates for NBS facilities*

	Replacement of existing facilities	Accelerator	Deadweight machines	Total	Initial appropriation	1959 supplemental
Preliminary design	$180,000	----------	----------	$180,000	$180,000	----------
Land	750,000	----------	----------	750,000	750,000	----------
Construction	49,310,000	$835,000	$50,000	50,195,000	----------	----------
Site development	1,575,000	20,000	----------	1,595,000	----------	----------
Utilities	3,300,000	----------	----------	3,300,000	----------	----------
Equipment and occupancy	21,000,000	1,710,000	1,500,000	24,210,000	----------	$100,000
Architectural and engineering	2,200,000	50,000	----------	2,250,000	----------	2,250,000
Field supervision	200,000	----------	----------	200,000	----------	----------
GSA:						
Design supervision	400,000	10,000	----------	410,000	----------	410,000
Field supervision	215,000	25,000	----------	240,000	----------	----------
Printing and reproduction	150,000	5,000	----------	155,000	----------	100,000
Surveys and tests	100,000	----------	----------	100,000	----------	100,000
Contingency	2,800,000	45,000	----------	2,845,000	----------	40,000
Total	82,180,000	2,700,000	1,550,000	86,430,000	930,000	3,000,000

Mr. PRESTON. Doctor, this matter has been under consideration for several years. We have heretofore appropriated funds to acquire the property at Gaithersburg upon which this building would be constructed.

The committee obviously felt at that time when it acquired the property that there was some justification for the construction of this build-

ing. There are undoubtedly new circumstances that have developed in the intervening years since the property was acquired, and the present date, and we certainly hope you will make that abundantly clear to the committee in your comments.

Dr. ASTIN. Thank you, sir.

Mr. PRESTON. You may proceed.

GENERAL STATEMENT

Dr. ASTIN. We have been seeking for some time to modernize the facilities we have at the National Bureau of Standards for laboratory work and, of course, this plan resulted in our request to you 2 years ago for which you gave us preliminary planning money and money to acquire a site.

In the interim we have found it increasingly difficult to make provision in our present laboratories for new facilities which we must acquire if we are to keep abreast of the growing needs of science and technology for services which are in the area of our statutory responsibility.

Two of those new requirements are upon us right at the present time, and have reached the stage where we have made some justification for those in connection with the $3 million we are seeking for designing this new facility.

For example, the growing importance of nuclear energy programs, both for the military and peacetime applications, has brought to our attention that our ability to provide the standard measurement techniques and individual standards of measurement in connection with basic data on properties and materials is severely limited by our present facilities. We must make a considerable extension of our ability to study high-intensity nuclear radiations. We need for this purpose a machine which will produce energies designed up to 40 million electron-volts. Although we have a machine of that sort at the present time, it does not produce enough intensity of energy to be useful for some new measurement problems. The machine for which we are requesting planning money in this estimate would give us intensities roughly a million times those available in our present machine. It is this which makes it essentially an important new facility and one which we must have if we are to provide measurement standard services in this growing area.

Another one is in connection with the calibration of devices for measuring very large forces. Large forces are of particular importance in connection with the development of large rockets, and we have been swamped over the past year with requests for calibrating larger force-measuring devices in connection with the apparatus which is used in the country's rocket-development program. The current requests are for accuracies in excess of the accuracy that we are able to provide. I might explain this briefly: At the present time we can calibrate devices with our highest accuracy up to about 100,000 pounds, where we do it by comparing the force-measuring device with calibrated dead weights. Beyond that we have to use indirect means and we can provide calibration beyond 100,000 pounds but not with the accuracies which are needed.

In connection with the development of rockets which will develop thrusts upward of 1 million pounds—and in fact some are now con-

templated in excess of that—there will have to be available accurate force-measuring devices and means for calibrating them far in excess of the present accuracies. In order to do this we need new facilities. In these two areas, high-intensity nuclear radiations and force measurement, we are confronted at once with the problem of where to locate these facilities. So, we are proposing to go ahead with the design of the Gaithersburg facility, and the design of these two important new facilities which were not included in our original estimates.

I have tried to emphasize here the importance of having this facility in order to be able to cope with growing new demands. Until we get moving on this Gaithersburg facility we will be considerably handicapped in trying to establish the facilities on any site.

Now, in the preliminary planning, for which you gave us funds 2 years ago, we developed estimates for the cost of this facility of approximately $86 million. These, as you recall, were considerably in excess of our earlier and admittedly very rough estimates. Since that time we have been exploring ways and means of reducing that cost. We have found that by doubling up the wings of the buildings and placing laboratories back to back we can make the building quite a bit more compact and eliminate two exterior walls.

This results in about a $2 million saving in the construction costs, and with other things on site development and utilities which we have been working on, we were able to bring about a reduction in our estimates of a little over a year ago of about $3.8 million.

However, I should emphasize that previous estimates were for duplication and modernization of present facilities based on present program. We emphasized then, and I would like to emphasize again, that they did not include facilities for important new programs. These will have to be acquired as they come up and will be in addition to our present estimate.

Now, two of these new facilities I have mentioned: The linear accelerator, which we need for extending our competence on nuclear-radiation standards, and a dead-weight testing facility which we need in order to cope with large-force calibrations.

The chart which was introduced into the record shows how these factors modify our cost estimate. When we consider our estimate of a year ago and the reduction we have made in it and the addition of two new facilities, we come back to a value of approximately what we had of a year ago, or a little over, for this one, of $86,430,000, but this does provide two important new equipment facilities which were not involved in our original estimates. These are facilities which we urgently need to cope with the growing new problems. We would find it most difficult to proceed without this Gaithersburg relocation.

We are requesting as a supplemental for fiscal year 1959 the architectural-design money to go ahead with this work in an amount of $3 million; $2.25 million of this would be for the architects and $650,000 would be for the services of the Public Buildings Service. $100,000 would be for the detailed design of this linear accelerator which I mentioned.

Mr. Preston. Before we get to the cost matter why was not this item put in the regular request, Doctor, for the fiscal year 1959?

Dr. ASTIN. It has been under consideration by the Bureau of the Budget in terms of national policy involving the construction of facilities, and we, of course, have been after it all along, but the decision was not made by the Bureau of the Budget until fairly recently to forward this as a supplemental. We are, of course, most anxious to have the funds in fiscal year 1959 because we need this facility as soon as we can get it. Deferring it would mean a delay of at least 1 year in the date in which these would be available to us.

USE OF EXISTING ACCELERATORS IN LIEU OF BUILDING NEW ONE

Mr. PRESTON. The Atomic Energy Commission is supporting and funding a number of accelerator programs mainly through research contracts with private laboratories and institutions.

Dr. ASTIN. Yes, sir.

Mr. PRESTON. What is the requirement for you to have an accelerator? Is the Atomic Energy Commission cooperating, and what will be done here which cannot be done by the Atomic Energy Commission?

Dr. ASTIN. We have discussed this with the Atomic Energy Commission, and they have concurred in our plan to acquire this type of accelerator. The mission of the Atomic Energy Commission is partly to aid the development and utilization of atomic energy throughout the country both for military and civilian purposes. Our job is to provide the standards for physical measurement and the standard testing techniques which are used throughout all of science and technology. The Atomic Energy Commission recognizes our responsibility in this area of standards and precise physical determination, and has no objection and sees no conflict in our acquiring this facility.

Mr. PRESTON. Would it be possible to use the accelerators which are in existence in other laboratories or institutions to accomplish the same purpose that you seek here?

Dr. ASTIN. There is no existing accelerator designed to do specifically the work which this is planned for; that is, this is aimed at the development of the basic measurement techniques, and individual standards which will be used by everybody. The other machines in the same general class as this are not planned with the same degree of precise control of the voltage and other properties as this is. These controls are necessary if we are to give the ultimate in accuracy, which we must do in the development of standards.

Mr. PRESTON. I am wondering just how much better you will be able to perform your mission with this new facility than you perform it currently with existing facilities.

Dr. ASTIN. Well, there are many needed measurement services which are just not available at the present time in connection with areas such as those using high-intensity radiations for various industrial processes. In the absence of these standard measurement techniques there is confusion in the interchange of data between the laboratories and there is confusion in the development of safety standards and requirements for these machines. This confusion will exist until we are in a position to provide the services which this facility will make available.

Mr. PRESTON. Has the fact we have suddenly become aware of the scientific capacities of the Soviet Union had any bearing on the decision of yours to move along with this project?

Dr. ASTIN. This project has been under study and development by us for approximately 3 years, and it has no relationship or no specific relationship that I am aware of to Soviet achievements in this field. It is based entirely on our own needs.

COMPARISON OF STANDARDS OF MEASUREMENTS PROGRAMS OF SOVIET UNION AND THE UNITED STATES

Mr. PRESTON. Would the construction of this facility further the ambition of this Nation to continue its superiority in the field of science in the future?

Dr. ASTIN. Oh, very definitely. I would say it is not only fundamental, but it would be essential to it.

Mr. PRESTON. You have learned something about the Soviet system of standards?

Dr. ASTIN. Yes, sir.

Mr. PRESTON. And I believe you have told the committee something about that in the past.

Dr. ASTIN. Yes, sir.

Mr. PRESTON. We have had considerable testimony on this building in the past, have we not?

Dr. ASTIN. Yes, sir.

Mr. PRESTON. Would this in your opinion place you in an advanced position as far as standards for measurement are concerned vis-a-vis the Soviet Union?

Dr. ASTIN. To the best of my knowledge, this would, but if you would permit, I would like to call on one of our leading experts in this field, whom I have with me, Mr. L. S. Taylor, who is Chief of our Atomic and Nuclear Physics Division under which this facility would be operated, and under whose direction this was planned. He is much more familiar with this than I am. I might mention that normally I would have expected Dr. Robert Huntoon, our Associate Director for Physics, to defend this, but he is currently involved in an important assignment for the Appropriations Committee. I do not know whether you know about that.

Mr. PRESTON. No.

A lot of things go on around here about which we are not aware.

Dr. ASTIN. This was done at Mr. Cannon's request, and he is tied up on that. However, I have Mr. Taylor with me, and with your permission I would like him to comment on that question.

Mr. PRESTON. Did you hear the question, Mr. Taylor?

Mr. TAYLOR. I do not believe I followed it completely.

Mr. PRESTON. Mr. Reporter, would you please read the question?

(Thereupon, the pending question was read by the reporter.)

Mr. TAYLOR. I think I can answer very definitely "Yes" to that question.

For example, one of the things that we know that the Russians are working on now has to do with the direct conversion of heat into electric power in their reactors through the thermoelectric process. This involves control of materials, for example, at very high radiation intensities, higher than anything we normally work with in the laboratory.

(Discussion off the record.)

Mr. TAYLOR. I will give some examples, if I may. This has to do, for example, with the obtaining of power from a nuclear reactor, direct conversion of heat to electricity by the process known as the thermoelectric process.

Mr. PRESTON. Before we hear an enlightened discussion of nuclear energy, we are talking about an entire building at Gaithersburg and not just the accelerator. You are beginning to talk about the nuclear energy factor of this facility?

Mr. TAYLOR. Yes.

Mr. PRESTON. I am talking about the entire structure. The nuclear reactor only involves $4.7 million?

Dr. ASTIN. That is correct.

Mr. PRESTON. We of course are interested in this reactor. I would not minimize that at all. But at this point we are talking about the entire structure. In the time allowed us we do not want to go into the technical features as much as in the general presentation.

Dr. ASTIN. I am sorry. That was my fault. I thought the question was specifically on the reactor.

In connection with the whole facility, it is my feeling that our acquisition of this facility would substantially strengthen our competitive position with the Russians in the field of measurements and standards.

Mr. PRESTON. What were the words you used?

Dr. ASTIN. It would substantially strengthen our competitive position with the Russians in the field of measurements and standards.

Mr. PRESTON. That does not tell us very much, Doctor. Let us see what this word "strengthen" means. Where do we stand in relation to the Russians in the field of measurements?

Dr. ASTIN. We do not have too much information as to where we stand in some areas. I think in the area of electrical measurements we are in a fairly good position competitively. In the field of temperature measurements I think we have quite a bit of ground to make up. But we do not have enough data on their detailed competence to run down a checklist and indicate whether we are behind or ahead in specific areas. We have only general impressions and the general impression is that in some areas such as the temperature measurement field we are behind, and in other fields like electrical measurements we are probably about equal.

Mr. PRESTON. Name some of the other fields of measurements where there might be some question as to our relative standing.

Dr. ASTIN. Nuclear radiation measurement; radio and microwave frequency measurement; precise chemical measurements; these are the major fields.

Mr. PRESTON. You are not sure about these latter fields you have mentioned as to where we stand?

Dr. ASTIN. No, I am not. I would like to emphasize that of measurement and standards for measurement underlie all technological progress, and we know of many areas where our inability to provide more exact standards for measurement is impeding industrial progress as well as scientific progress in the laboratories.

Mr. PRESTON. We went into this at one time very briefly, but how much information are you getting from the Central Intelligence Agency on the Soviets' ability in the field of measurements?

Dr. ASTIN. I am not specifically aware of any information we have received from them. There are documents available in the open literature which we have available to us. We have made a selective translation of a few articles and are in the process of arranging for the systematic translation of full volumes they are putting out which describe their measurement advances. Until those translations are complete we will not be able to make the kind of detailed evaluation which I think would be of interest to you in reply to your question.

Mr. PRESTON. How often do you get reports from the CIA on anything that would be of interest to the Bureau of Standards?

Dr. ASTIN. They send us some. One is in the field of automatic computation. They have sent up a number of reports of Russian work in that field.

Mr. PRESTON. Have not American businessmen been abroad and observed the Russian capacity in the field of computations and brought back intelligent statements or reports themselves about the accomplishments of the Russians in this field?

Dr. ASTIN. Yes.

Mr. PRESTON. So what the Central Intelligence Agency is furnishing you in that field is no more than what qualified American businessmen in that field have brought back? Is that a fair statement?

Dr. ASTIN. I think it is reasonably fair. I think they are comparable.

Mr. PRESTON. Then it is not an accurate statement to say the construction of this building is directly related to our scientific race with the Soviet Union?

Dr. ASTIN. Yes, I think it is because the construction of this building is directly related to the entire technological strength of our country. Our statutory responsibilities and our ability to perform these effectively have a direct influence on the total technological competence of our country, and to the extent we can render these services more satisfactorily we strengthen our competitive position as a nation as compared to the Russians. So in this area I think it is very important.

Mr. MOORE. Mr. Chairman, may I give you an impression that I have after listening to literally weeks of talking in this area?

Mr. PRESTON. Yes, Mr. Moore.

Mr. MOORE. This has caused probably more concern in the Department of Commerce than almost any program that we have had. The Secretary has taken a tremendous interest in it. Under Secretary Williams has constantly been talking about it. This is the impression I get. We are using an obsolete factory at the Bureau of Standards. Our competitors, the Russians, have modern equipment, as it has been told to me, and they are moving very rapidly. We have to modernize our facility to go ahead.

Dr. Astin told me in the field of heat measurement the Russians are probably ahead of us at the present time. Is that right?

Dr. ASTIN. Yes.

Mr. MOORE. Our facilities for heat measurements are, I would not say obsolete but, antiquated. Dr. Astin feels in the field of electronics we are probably ahead of them. Is that right?

Dr. ASTIN. I think so.

Mr. MOORE. But the modern equipment the Russians have put in recently is such they can make faster progress than we can in the present Bureau of Standards buildings which were started in 1903 and are 55 years old. This, to us, is one of the most important projects we can undertake because this is going to become that Bureau which will lead this country into the areas of the future technology of the world.

Mr. PRESTON. Mr. Secretary, the questions I am asking are not being asked with an attitude of hostility to this proposition.

Mr. MOORE. I understand perfectly. You are trying to get this thing out in proper perspective.

Mr. PRESTON. As far as I am personally concerned our relative standing is of peculiar interest to me because I have just returned from Brussels where I saw the Russian exhibit.

Off the record.

(Discussion off the record.)

COST OF REPLACEMENTS AND NEW BUILDINGS

Mr. PRESTON. Back on the record, in order that we may know what this figure of $86,430,000 means, is it for the completion of the building and specialized equipment and ordinary equipment that will go into the building to make it what might be called the optimum in the laboratory for the conduct of experimentation in the field of measurements and standards?

Dr. ASTIN. Yes, I think it would. However, I think I should mention there are a few areas which we envision we will have to have new facilities, for sometime in the future when we complete our planning for them, which are not included here. I might mention one because this was the subject of discussion earlier this spring. Those are the facilities for producing, controlling, and measuring extremely high temperatures, in the order of many thousands of degrees, 10,000° and thereabouts. Facilities are not included here primarily because our planning as to what is needed has not advanced to the point of including them.

I would like to repeat that the estimate given here is for the modernization of facilities for our present program plus two important new facilities not presently included in our present program, namely, the high intensity electronic accelerator and the large force calibrating device. As new requirements come along they must be added to this, I would hope, but this is essentially a replacement of our existing facilities with modern facilities.

Mr. PRESTON. It picks up your present operations and moves them to Gaithersburg providing new and modern facilities in many areas?

Dr. ASTIN. Yes.

Mr. PRESTON. Some of your present equipment, I take it, can be moved to the new location?

Dr. ASTIN. That is right.

Mr. PRESTON. Have you been able to establish any estimates at all as to the cost of the facilities not fully planned for?

Dr. ASTIN. We have some very rough estimates on a few of them. I will mention three that are still in the planning stage.

One is very high temperature facilities. My guess is we might ultimately seek something costing in the vicinity of $1 million for this purpose.

We also need a reactor, or think we will need a research reactor in the future. Our tentative estimate for this is in the vicinity of $4 million to $5 million.

We also will need, ultimately, a new improved standard-frequency broadcaster. At present we serve the needs for standard frequency broadcasts at WWV in Maryland and WWVH in Hawaii. These transmitters do not give frequencies of sufficient accuracy for the needs of science. We are hoping to come up with an optimum design to meet these needs.

Those are three things I might mention.

Mr. FLOOD. Is that transmitter for the purpose of transmitting information to the public?

Dr. ASTIN. No. It is for the purpose of giving to the scientists and engineers of the country very accurate radio frequencies. A new facility is needed.

Mr. PRESTON. Will the elimination of the sum of $3,810,000 for plant facilities restrict the technical efforts of the Bureau?

Dr. ASTIN. No; it will not, in my opinion.

ADEQUACY OF NEW BUILDING PLANNED

Mr. PRESTON. One other question. Using your best judgment, how far in the future are you planning for the usefulness of this building?

Dr. ASTIN. Our initial planning was for a facility which would be big enough in terms of providing laboratory and office space for our staff in 1963 or 1964. We had made estimates as to how big we might be 5 or 6 years from now, and this facility in terms of size is planned on that basis. Actually, it represents only about a 20 percent increase over our present assignable net floor space.

Mr. PRESTON. That strikes me as being an amazingly small number of years. Is the design of the building such that it can be readily expanded without interfering greatly with what is going on inside the structure?

Dr. ASTIN. Yes, sir. As a matter of fact, that was one of the points we tried to emphasize a year ago and one of the factors which led to the discrepancy in the cost estimates a year ago. This is designed as a modular wing structure so that expansion can be made with the minimum of cost. In my opinion—and Mr. Poorman will probably support me on that—that would make for a lower overall cost if one has to cope with expansion. This design would permit, quite easily, modification for future needs.

TYPE OF STRUCTURE

Mr. PRESTON. If it is agreeable to the committee we will hear from Mr. Poorman as to the type of structure and then open the entire matter to questioning.

Mr. POORMAN. Mr. Chairman, at the time of our appearance before you last year I think we probably mentioned the submission of the architect had been received approximately 10 days prior to our appearance. Subsequent to that appearance the Bureau of Standards

people and ourselves have had numerous conferences between the two groups and with the architect and the savings Dr. Astin has testified to are the result of those conferences.

The site plan which has now developed recognizes the expandability of two wings of this building, two additional wings on this building, further expansion of this building, so that the entire siting and planning has taken into consideration subsequent flexibility.

The other major change consisted of taking the laboratories and substantially putting them back to back. As testified last year, the laboratory space has facilities to carry any type of liquor or gas to it and can adjust to meet any reasonable requirement.

The exterior grounds and services have been simplified with substantial savings in cost. The basic construction within the laboratory area is consistent with good commercial laboratories. May I go off the record?

(Discussion off the record.)

Mr. PRESTON. Would you like to go back on the record now?

Mr. POORMAN. Our normal construction in the outlying areas has been brick or comparable construction. I am not too sure but what the CIA Building may be some type of prefabricated concrete. The AEC Building is brick. That general quality of construction is what this is priced on. The use of any stone, whether it be marble or granite or any other type of stone, would add significantly to the cost of the exterior of the building.

Mr. PRESTON. From the standpoint of maintenance, is there any appreciable difference between the use of marble, granite, brick, or prefabricated concrete?

Mr. POORMAN. Sir, I do not think there is. Our exterior maintenance is something we are faced with now since we have had very little maintenance funds for about 17 years. Perhaps one of our major problems is cleaning, and we repoint when we do cleaning. But the exterior of buildings becomes very dirty and cleaning and roof repair have been our principal exterior problems.

Mr. FLOOD. Off the record.

(Discussion off the record.)

Mr. PRESTON. There is not any problem about an access road to this site, is there?

Mr. POORMAN. No, sir.

Dr. ASTIN. No, sir.

ACQUISITION OF LAND

Mr. PRESTON. Has the land been fully acquired, Doctor?

Dr. ASTIN. The land has been fully acquired but the latest information I have is that it has not been paid for. Prices are still being argued.

Mr. POORMAN. We filed a declaration of taking which gave us access to the land promptly, and we posted the appraised fair market value of the land with the courts and they are in the process of making a determination.

Mr. PRESTON. We will now open the matter for general questions by Mr. Yates.

Mr. YATES. When was authority to acquire this land given?

Dr. ASTIN. Two years ago.

Mr. YATES. Off the record.

(Discussion off the record.)

Mr. YATES. What is happening to the Connecticut Avenue property that is owned by the Bureau of Standards?

Mr. POORMAN. May I go off the record?

(Discussion off the record.)

Mr. YATES. Do you want to go back on the record now and can you tell us how much money you think you can realize through the disposition of that portion of the property which you do not intend to use?

Mr. POORMAN. Approximately $3 million.

Mr. YATES. Can you tell us what portion of the property is involved which will produce that revenue?

Mr. POORMAN. As I recall, approximately one-third. Off the record.

(Discussion off the record.)

FUNDS REQUESTED OF THE BUDGET BUREAU

Mr. YATES. Did you ask the Bureau of the Budget for more money than you are asking this committee, Dr. Astin?

Dr. ASTIN. We asked the Bureau of the Budget for the entire amount.

Mr. YATES. Of how much?

Dr. ASTIN. $86,400,000.

Mr. YATES. And they approved the full amount?

Dr. ASTIN. No; they authorized us to ask for the $3 million which will cover the architectural and designing cost.

Mr. MOORE. May I say this, that there was full agreement between all of us that the $3 million come up, because there was no need to obligate these additional funds in the next fiscal year and they felt $3 million would start the project.

Mr. YATES. Was there any understanding with the Bureau of the Budget as to the approval of the balance of the amount listed here?

Mr. MOORE. We make the assumption, because they approved the $3 million, that they would approve the amount for the full project.

Mr. YATES. That is your assumption, but what did they say?

Mr. MOORE. Let me say this, they did not indicate they would not.

Mr. YATES. They did not indicate they would not and they did not indicate they would?

Mr. MOORE. No. The discussion was as to whether to come before this committee with $86 million or whether $3 million would start the project.

Mr. YATES. Was there a program laid out for the expenditure of more than the $3 million before the committee presently, and what is the program for completion of the project?

Mr. MOORE. You have the plan.

Mr. YATES. How much will you ask the Bureau of the Budget for next year?

Mr. MOORE. $86 million minus $3 million.

Mr. YATES. But as of this morning you do not know if the Bureau of the Budget will approve the remaining $83 million?

Mr. MOORE. I cannot speak for them.

Mr. YATES. Ordinarily they give you an indication; do they not?

Mr. Moore. The discussion we had was as to whether to come up for the entire sum or to come up for the $3 million that could be expended.

Mr. Yates. Dr. Astin, did you ask the Bureau of the Budget for any other projects than those listed in these justifications?

Dr. Astin. No, that is all.

Mr. Yates. That is all.

Mr. Preston. Mr. Flood.

ADEQUACY OF CONSTRUCTION PLANNED

Mr. Flood. If the whole job is to cost $86 million, and keeping in mind similar projects that cost about the same round figure the night before you broke ground, if you break ground for this next year or in the 1959 fiscal year with $3 million, you are not going to do much ground breaking. That is about all you will do. The next year you will ask for $83 million. With a 20 percent increase, taking 3 years to build, and a 5-year program, you will be obsolescent the minute you break ground on only a 20 percent increase? Is that right?

Dr. Astin. Assignable floor space, yes.

Mr. Flood. 20 percent increase plus 3 years to build and a 5-year program?

Dr. Astin. Yes.

Mr. Preston. Will the gentleman yield?

Doctor, do you mean to say your building will be obsolescent when you build it?

Dr. Astin. No, sir.

Mr. Preston. Mr. Flood asked you that question and you said "yes".

Dr. Astin. I misunderstood the question.

Mr. Preston. You had better be sharp about this.

Dr. Astin. I misunderstood the question.

Mr. Preston. The gentleman from Pennsylvania carries a sharp rapier. I have learned that from experience.

Mr. Flood. It has been blunted on occasion.

You see, Doctor, my purpose is not entrapment.

Dr. Astin. I know that.

Mr. Flood. I have been around a while and since I have been here we have put up a lot of Georgia marble structures and so on but the trouble is we always find out it takes 3 years to build this kind of a thing in a round educated figure, and the figure is always between $50 million and $80 million. There is something magic about those figures. The programs are always 5-year programs. It always takes 3 years to build them. Which means, with your 25-percent increase—you said 20 percent—5 years from the time we break ground they are obsolescent.

Dr. Astin. No. The structure will not by any means be obsolescent.

Mr. Flood. Obsolescent in the sense you will need 25 percent more floor space 5 years after you break ground.

Dr. Astin. If our program requirements which Congress approves require expansion in excess of that, we would undoubtedly fill it in on the dotted line in our diagram, because this is planned for ready expansion.

Mr. Flood. I am speaking about $86 million. That includes all these elastic wings you will put on. I am talking about $86 million. You are talking about $3 million in the 1959 budget. This man told Mr. Yates you would ask for the $86 million minus $3 million in the 1960 budget. Therefore, with a 20-percent increase, with a 3-year building program to throw the switch and open the door, 5 years from the day you break ground with a 25-percent increase you will be obsolescent on floor space the minute you put the pick in the ground. And if your program it to accelerate your program to keep up with the Russians—which I hope you are—I am concerned with your percentage of acceleration. I am talking about your acceleration in direct proportion with the Russian acceleration. At the end of 5 years you will need another $86 million building.

Dr. Astin. There is a substantial difference between having obsolete equipment and making progress. At the present time we are behind, and if through circumstances which may warrant expansion of some of our programs——

Mr. Flood. Which shall warrant, which must warrant, you hope; do you not?

Dr. Astin. Well, I am sure that our program must expand with the expanding requirements of science and technology.

Mr. Flood. Certainly.

Dr. Astin. Our estimate 5 years from now is based on a rough estimate in the Bureau over many decades in the past and this is a reasonable extrapolation.

Mr. Flood. At the end of a 5-year period every square foot will be utilized at that point: right?

Dr. Astin. I would hope so.

Mr. Flood. Certainly. That is the end of that argument. What the result is I do not know, but that is the fact. The building will not be utilized for program expansion on that potential at the end of 5 years. You will have to start over again. I do not say that is wrong. I just want everybody to know where we are.

ACQUISITION OF EQUIPMENT

Secondly, we went through this with the accelerated CAA program over a period of the last 5 years. CAA wanted to do a lot of things and everybody was for it but they could not do it because they had insoluble hardware bottlenecks. While you are putting this Georgia marble and Ohio tile and no Pennsylvania coal into the building, what will be the situation the day you open your building with the long-hair, flat-heel hardware?

Dr. Astin. We would hope, according to the program Mr. Moore outlined, to start procuring the new hardware we need for the building in fiscal 1960.

Mr. Flood. I do not mean plumbing and electric lights. I mean scientific hardware, all this hocus-pocus stuff you must have. Are we going to have a beautiful building for a tea dance or will we have the great Bureau of Standards ready to go?

Dr. Astin. You will have a Bureau of Standards ready to put out good scientific work shortly after we open it.

Mr. Flood. Shortly after? "Shortly" means what in hardware?

Dr. Astin. I doubt that the building will be finished all at once.

We probably will activate it partially. Then we probably will be out of operation maybe for the better part of 2 months in any one laboratory.

Mr. FLOOD. You misunderstand me. I am not interested in what you have now or where you are going to be, but wing by wing, as you activate a wing, if you are going to build this new facility wing by wing, or however you build it, if that is your plan will you have available all the necessary and essential scientific hardware to function at the time you open that wing?

Dr. ASTIN. I would certainly hope so.

Mr. FLOOD. All right.

CIVIL DEFENSE CONSIDERATIONS

In all of your planning, for this great modern building, to do these great futuristic modern things, all necessary and essential for the great advance of modern science in the years ahead, what provision have you made in the construction of this building with reference to blasts, radiation, and nuclear damage of any kind whatsoever, above ground, below ground, for your hardware, for your records and for your personnel?

I am not talking about a direct hit. If you get a direct hit with a nuclear weapon you have no problem, period, but with the area of radiation attack up to 20 miles, what are you planning or what have you got?

Dr. ASTIN. We will follow the recommendations of the Public Buildings Service. I think Mr. Poorman can answer that.

Mr. POORMAN. As you gentlemen know, this has been an area in which there has been a wide variation of opinion. The committees of Congress have taken various attitudes when FCDA approached them. While I don't pretend to be an authority in this area, the National Security Council, according to FCDA, have recently announced the intent to provide shelters to resist radiological fallout.

We have, as of last December, decided as a policy that we would select the portion of a building which has substantial shelter potential, and through selective design improve that shelter potential.

If I can put that in everyday language, the basement, which may be a garage, which may be storage area, which may be cafeteria, and in which there is an earth fill against the exterior wall, by increasing the thickness of the floor or we can provide at very nominal cost, protection against radiological fallout as a skeleton, we say.

To complete that, we would have to put in standby utilities, supplies, and various other things.

There has been no announced policy, either by the Administration or by you gentlemen, so far as funding is concerned, that would give us guidance to say, "Let's go all out and do all of these various things."

Mr. FLOOD. When you say "you gentlemen," you mean this subcommittee. The reason I ask the question is, are you ready to present to this subcommittee on this request for funds to construct this great facility, suggestions and proposals in dollars, on this phase of the construction?

Mr. POORMAN. Congressman Flood, I do not mean this subcommittee. I mean——

Mr. FLOOD. You said, "you gentlemen."

Mr. POORMAN. I meant collectively Congress. I meant the various hearings that FCDA have had, and the repeated discussions. There has been no clear-cut guidance which would say, "We are willing to spend 25 percent more to build a structure to resist 30 pounds overpressure or any such thing."

Mr. FLOOD. I look upon you as the building expert for the purpose of this testimony. As far as you are concerned, the administration, in all of this vast multibuilding program with which we are now proceeding on Capitol Hill and in the suburbs, has no plan, analysis, or projection for the questions I have raised as far as you know, and you would know.

Is that not right?

Mr. POORMAN. The present policy is to protect against radiological fallout.

Mr. FLOOD. No protection for blast, in case of so-called limited warfare or fire?

Mr. POORMAN. There has been no stated policy.

Mr. FLOOD. And the radiological provision or the suggestion for protection against radiological or nuclear warfare, as we say, is nowhere beyond the very skimpy and limited radiation fallout aspect only?

Mr. POORMAN. I think that is a fair statement.

Mr. PRESTON. Any questions, Mr. Clevenger?

Mr. CLEVENGER. No; except to inquire whether we are going to follow the book. You have been doing it pretty well this afternoon.

Mr. PRESTON. Thank you, sir.

Mr. Bow?

Mr. BOW. No questions.

Mr. PRESTON. Mr. Horan?

FUNDS FOR CONSTRUCTION

Mr. HORAN. You are anxious to get this laboratory underway and accelerated?

Mr. MOORE. Yes, sir.

Mr. HORAN. Will it be underway as quickly if we follow the Bureau of the Budget's recommendations or if an appropriation is made?

Dr. ASTIN. It is our feeling that we need some time to do the detailed planning, both of the accelerator and the building it is housed in, and if we are able to go ahead with that during fiscal year 1959, we would hope to be able to let contracts both for the building and the accelerator to put in there a year from now. This is just about as quick as we could operate. That is, it would make very little difference having the money available now to buy the machine, because we wouldn't have anyplace to put it until we get the building up.

Mr. HORAN. There is an increasing amount of emphasis being placed on science and technology by the Library of Congress. Does your shop utilize those facilities?

Dr. ASTIN. Yes, sir. We make considerable use of the Library facilities.

Mr. HORAN. They get a tremendous amount of Slavic and Russian scientific books over there.

Dr. ASTIN. Their book, which lists their Russian acquisitions, is made available to us and we use it quite frequently.

Mr. HORAN. They have a rather huge library in that field, about 2 million books, I believe.

Dr. ASTIN. It is tremendous.

Mr. HORAN. It is growing every day. That is all, Mr. Chairman.

Mr. PRESTON. That is all. Thank you very much.

BUREAU OF PUBLIC ROADS

INTER-AMERICAN HIGHWAY

WITNESSES

GEORGE T. MOORE, ASSISTANT SECRETARY FOR ADMINISTRATION
OSCAR H. NIELSON, DEPARTMENTAL BUDGET OFFICER
BERTRAM D. TALLAMY, FEDERAL HIGHWAY ADMINISTRATOR
PAUL F. ROYSTER, ASSISTANT COMMISSIONER FOR OPERATIONS
JAMES C. ALLEN, ASSISTANT COMMISSIONER FOR ADMINISTRATION
ROYAL E. OLMERT, CHIEF, BUDGET AND MANAGEMENT DIVISION

Mr. PRESTON. The next item before the committee is to be discussed by the Bureau of Public Roads.

At this point we will insert in the record pages 1 and 2 of the justifications.

(The justification follows:)

BUREAU OF PUBLIC ROADS

Inter-American Highway

Budget estimate (1959)	0
Revised budget estimate (1959)	$10,000,000
Request (to remain available until expended)	10,000,000

Needed: July 1958.

PURPOSE AND NEED FOR SUPPLEMENTAL FUNDS

Public Law 85–452, approved June 6, 1958, provides for an additional authorization for appropriation of $10 million for completion of the Inter-American Highway. The need of the full amount of the authorization for a fiscal year 1959 appropriation is explained below.

JUSTIFICATION

Substantive legislation

Public Law 129, 84th Congress, approved July 1, 1955, authorized the immediate appropriation of the $8 million previously authorized for each of the fiscal years 1957, 1958, and 1959, together with the immediate appropriation of an additional sum of $25,730,000 to provide the additional amount then estimated to be necessary to complete the Inter-American Highway on an accelerated basis. The sum of these authorizations, totaling $49,730,000, together with the unappropriated authorizations then available, provided a total of $74,980,000 for completion of the highway.

During fiscal year 1956, a total of $62,980,000 was appropriated against an appropriation estimate of $74,980,000. The unappropriated balance of the authorizations totaling $12 million was later appropriated for the fiscal year 1958.

During the course of proceeding with the accelerated program, it became apparent that the 1955 estimate of the cost of completing the highway on an accelerated basis would not be adequate to provide a paved surface over the highway's full length. Upon development of a revised estimate, it was determined

that an additional $10 million would be required for full completion. Public Law 85–452, approved June 6, 1958, provides the additional authorization of $10 million.

Status of the program

As of May 31, 1958, project agreements obligating approximately $66 million of the $74,980,000 currently available have been executed with the Republics of Guatemala, Honduras, Nicaragua, Costa Rica, and Panama. It is expected that the available balance will be obligated earily in fiscal year 1959 when requested funds for paving become available and when Costa Rica makes available its matching share. On the following page, a tabulation (exhibit A) reflects actual and estimated future progress in the execution of project agreements with the various countries.

Also as of May 31, 1958, contracts had been let for a total of approximately $49 million (including engineering and contingencies). Exhibit B reflects by countries the actual and projected status of contract awards through fiscal year 1959—assuming appropriation of an additional $10 million for fiscal year 1959.

In July 1955, when the accelerated construction program began on the 1,573 miles of the highway line between the north border of Guatemala and the Panama Canal, 548 miles were completed to a paved surface status. Construction work of one type or another was required on the remaining 1,025 miles. Of this 1,025 miles, 769 miles required grading and drainage: a base course of crushed gravel or stone was required to be placed on 1,025 miles; and the entire 1,025 miles required final paving.

As of May 31, 1958, 868 miles of the above-mentioned 1,025 miles have been placed under construction, including all impassable sections and 100 bridges. Construction contracts required for completion of the grading, drainage, and bridges for all except approximately 35 of the 1,025 miles are expected to be underway by the end of fiscal year 1958. A tabulation on the following page reflects in detail the status of completion of the highway at various stages of financing.

With the exception of one 140-mile project in northern Costa Rica, extending to the Nicaragua border, and a 13-mile project in Panama, none of the present construction contracts include the final paved surface. This priority of construction and utilization of available funds is in accordance with the resolution unanimously passed at the Sixth Pan-American Highway Congress: "That opening of impassable sections, improvement of the low standard sections, and construction of permanent bridges have priority in the use of available funds so as to permit continuous all-weather travel over the full length of the highway at the earliest practicable time."

In view of this priority on funds, it has been the policy to initiate no additional paving until all grade, drainage, base course, and bridge work has been fully financed. It now appears that presently available funds ($74,980,000) will cover all of that work plus a limited amount of additional paving. However, it is estimated there will still remain approximately 843 miles which cannot be paved unless an additional $10 million of United States funds can be provided.

Mr. PRESTON. This request deals with the Inter-American Highway and is in the amount of $10 million.

Mr. Moore, did you wish to speak to this item first?

Mr. MOORE. Mr. Tallamy is here to speak to this item, Mr. Chairman.

Mr. PRESTON. We will be glad to hear the Administrator of the Bureau, Mr. Tallamy, at this time.

RÉSUMÉ OF PROGRESS ON PROJECT

Mr. TALLAMY. Thank you, Mr. Chairman. I though you might be interested in a brief résumé of the progress we are making, and the amount of work remaining to be done. In Guatemala there was 84 miles of paved highway when we started this project under the current authorization. There remained 233 miles to place under contract, and we have actually the full 233 miles now placed under contract

for grading, drainage and subbase, including practically all of the bridges. There remain five bridges in the northern section which we have not yet started.

The Inter-American Highway work in Guatemala has been progressing very well, with the exception of some very serious slides in the Selegua section. That is a most difficult problem. In that section, because of the youngness of the geological formation of the earth crust, it is unstable and as a result we have had a great deal of trouble with slides. As a matter of fact, we had the road open for controlled traffic all the way from the Mexican border to San Isidro, Costa Rica, for about a week this June. Then one of the slides which had blocked the river valley was washed out as a result of the torrential rains they have had this rainy season and that great body of water coming down the canyon made the temporary bridge unsafe for traffic. We have had to close this section of the road to traffic until that bridge can be repaired.

There remains the 233 miles of paving to be done in Guatemala.

In El Salvador the highway was already completed all the way across the country, 195 miles, so there was no further work to be done in this country. In Honduras we had 94 miles of highway to undertake which is the entire length in that country. We have it entirely under contract for grading, drainage, and subbase work, including bridges. We still have the paving to do.

In Nicaragua there was 132 miles completed. We had 106 miles on which to undertake grading, drainage, and paving work. We have the grading and drainage and subbase work under contract and it is progressing very well.

In Costa Rica there was a 71-mile section of which 60 miles was in fairly good condition and finished, but there are some slip-fills that have to be corrected and this entire section has to be paved. Eleven miles has to be completely reconstructed. We still have that work to do. It is not under contract.

In addition to that, we had 148 miles in the northern portion of Costa Rica to place under contract. Contract has been let for grading, drainage, base, and paving of this section.

In the southern part of Costa Rica, we have 134 miles of work to do, and that has been accomplished to the extent of placing under contract grading, drainage, and subbase and some of the bridges. We still have 39 bridges yet to place under contract in that section.

We expedited the design of these bridges, and they were ready last December to let to contract. We took bids on the steel for 14 of these bridges. The steel has been, to a considerable extent, already delivered on the job. We have not awarded the contract for the actual erection of these structures because Costa Rica has not completed its financial arrangements. They are working on the financial arrangements but they have not yet completed them.

We expect that these arrangements will be completed before very long. When they are we will be able to expedite the erection of the structures because the steel has already been purchased and will entirely be on the job by the time that the Costa Rican Government has its financing arranged. We also will be able to go ahead with the construction of the other 25 concrete bridges.

In addition, in Costa Rica, I might point out that we have another 60-mile section which was already paved and built, on which there was no work to be done.

In Panama, there were 98 miles of paving already accomplished, so we did not have to do anything with that. However, there was a considerable amount of additional work to be done. We have placed under contract 13 miles for grading, drainage, base material, and paving. In addition to that, we have placed under contract 140 miles for grading and drainage and subbase material. That is under contract and in progress.

We have another 65 miles in Panama yet to be placed under contract. Thirty miles of this we plan to place under contract within the next 6 weeks or so, and the remainder will be placed under contract within the next 7 or 8 months, I expect.

Mr. Flood. What do you mean by "we have placed under contract?"

Mr. Tallamy. The Bureau of Public Roads or the Panamanian Government or the government about which I am speaking. This is a joint undertaking. We do it or the local government does, but before either we or the local government lets a contract, we have an agreement between that Government and ourselves, so it really is a triparty agreement.

This section of 65 miles in Panama will not interfere with the opening of the Inter-American Highway between Mexico and the Panama Canal, because it is a relocated section parallel to an existing road. The existing road, of course, is very substandard, but traffic can get over it without too much difficulty.

All of these contracts that I have mentioned are scheduled for completion in June of next year, or before, with the exception of one in Panama for a short section, which is scheduled for completion in October.

Mr. Flood. May I ask you this? Are you in the planning of this highway at the point at which it is to cross the Panama Canal? If it does, are you examining in connection with your plans, any proposals by any other committees of this House for a reconstruction of the canal or another canal, either at Nicaragua or Panama at sea level?

Mr. Tallamy. No, sir.

Mr. Flood. If such a matter took place would that in any way be a material disturbance to your program?

Mr. Tallamy. No, sir; I don't think so.

Mr. Flood. Only in that one spot?

Mr. Tallamy. Only in that one area it would mean the construction of either a drawbridge or high-level bridge in the area of the crossing of the canal. We have not discussed it with any other local government or any committee.

We expect this road will be open next June for controlled traffic all the way down to the Panama Canal. As a matter of fact, we believe that in this coming dry season traffic will be able to get through all the way to San Isidro, Costo Rica. Traffic will, however, be subjected to some delay at the construction sites where bridges have not been completed and traffic will have to go around those areas on construction roads.

Mr. Flood. Have there been any changes in general weather patterns anywhere on the route which would cause you to change or alter plans or designs; basic weather patterns?

Mr. Tallamy. No, sir. The Bureau and the countries involved have designed this highway, and I think rightly so, considerably differently than they would have in the United States. The country down there is, as I have indicated, relatively young in a geological sense, and as a result the soils are not stabilized as they are here, so one would normally think that in an area like that you should cut back the slopes even flatter than we do in this country, but contrary to that, the slopes are steeper, and the reason for it is that vegetation in that area grows so profusely that a raw cut will heal over very quickly and become stabilized. In spite of this geologically young nature of the earth's surface there, it does stand up pretty well on a steep slope in some sections. Accordingly the designers have taken a calculated risk and have actually designed the road, with steep cuts. They figured that if vegetation does take hold and stabilize those cuts, that a tremendous amount of money would be saved in actual excavation.

It has proven to be very successful in the majority of cases, but in some cases the cut has not stabilized, and the whole side of the mountain slides in, and in those cases it causes a lot of trouble.

ATTITUDE OF LOCAL PEOPLE TOWARD PROJECT

Mr. Flood. Has any political opposition developed since we made the original agreement or master plans that are important, or just local turbulent politics? Do you know of any organized, concerted political problem through the area that is material since we started?

Mr. Tallamy. I don't think so. I went down and looked this job over personally last summer. I wanted to become more familiar with the type of construction and the reasons for these steep slopes, and I had an opportunity to talk to a number of the officials in these countries and to our own Ambassadors, and the men that were right out on the road doing the work.

I gained no impression at all of anything, excepting ordinary problems of roadbuilding. I would say a real friendliness exists to the United States. I didn't see anything disturbing. I was concerned about what might be the situation in Guatemala. I arrived there the day after the President was assassinated and knowing the previous recent history of the country, and its communistic regime, I wasn't at all certain what the situation might be. I was there during the funeral of the President and I could see nothing but great grief for his loss and am convinced that the relationships in Guatemala with the United States are very good.

Mr. Flood. I am glad to hear that. I did not mean that so much as against the project as distinguished from the agreement.

Mr. Tallamy. No. As a matter of fact, I saw terrific enthusiasm for it. As the road was extended through the jungle area we saw Indians and natives that were building new buildings, and clearing the jungle out to build and to develop new little farms, right alongside the contractor's work, in anticipation of the benefits it would bring to them and to their area. Most all the people were enthusiastic, in that respect. As a matter of fact, they were so enthusiastic, Mr. Chairman, that they were building in some instances these huts right on the area that had been cleared by the contractor so the contractor had to remove them.

Mr. HORAN. Mr. Chairman, would it be too much work to prepare a map for the committee.

Mr. PRESTON. They may have maps, I am sure.

Mr. TALLAMY. I don't have one here. I can send one to you.

Mr. PRESTON. Please send us one for the committee files.

STATEMENT OF BUREAU OF INTER-AMERICAN AFFAIRS

Mr. PRESTON. At this point we shall put in the record a statement furnished by the Bureau of Inter-American Affairs, Department of State, dated December 31, 1957.

(The document follows:)

THE INTER-AMERICAN HIGHWAY

ECONOMIC AND OTHER BENEFITS WHICH WILL ACCRUE FROM ITS COMPLETION

Bureau of Inter-American Affairs, Department of State, December 31, 1957

The completion and hard-surfacing of the Inter-American Highway through all of Central America to the Panama Canal Zone will greatly accelerate very important economic, social, political, and cultural developments in Central America and Panama. While these developments will occur, inevitably, without our participation in this great project, they would certainly occur much more slowly and the mutual benefits would be greatly delayed. In the aggregate, these developments will, undoubtedly, have a very significant and profound effect upon all the nations of the Caribbean area, including the United States.

The major economic developments that can be expected are, in brief recapitulation:

1. Steady and rapid growth of agricultural development, population, and small industries in parts of Central America and Panama that were formerly difficult of access, if not entirely isolated.
2. Greatly facilitated and expanded domestic commerce within individual Central American countries and Panama.
3. Gradual but steady development of industries in particular countries which will supply markets in the other countries connected by the Inter-American Highway.
4. Substantial and important commerce between the Central American countries and Panama, and between those countries, the United States, and Mexico.
5. Accelerated increase in purchasing power in Central America and Panama, resulting in much larger imports from the United States, particularly of automobiles and equipment such as tractors which will be needed for the expanding agricultural development made possible by the highway.
6. Very large eventual direct tourist expenditures.
7. Accelerated modern economic development arising from (*a*) capital which is formed by the preceding developments and (*b*) the exchange of ideas and enterprise which, inevitably, will come about from the increased movement of persons.

In addition to these chiefly economic benefits, one may also expect significant political, social, and cultural benefits, among which are the following:

1. Accelerated development of stability and tranquility in relations between the Central American countries as a result of increased trade and personal contact of the peoples.
2. More rapid broadening of international outlook and understanding on the part of citizens of Central America and Panama, which will give them a greater sense of responsibility in the problems of the free world.
3. Thousands of Central American and Panamanian citizens will visit the United States sooner by reason of the highway, and direct reciprocal tourist expenditures alone may soon repay us for our contribution to construction of the highway.
4. United States citizens, in virtually unlimited numbers, will have the opportunity to visit six additional foreign countries (other than Mexico and Canada) in their own automobiles and gain the pleasure, the broadening of perspective, and other benefits of this experience.

5. Cultural integration and advancement in the entire Caribbean area should result because of the broadening effect of easy travel to and from the countries linked by the highway.

6. One should bear in mind the potential strategic significance of the Inter-American Highway for purposes of emergency truck-transport facilities between the United States and the Panama Canal Zone and between countries that are connected by the highway. Completion of the highway will eliminate for all time the absured situation in which the United States otherwise might find itself if there should be an emergency need for this highway where no through connection has existed because of only 175 unfinished miles. It should not be forgotten that hundreds of freighters and tankers were sunk in the Caribbean area in World War II. Moreover, valuable aircraft capacity was utilized to ship even foodstuff from Costa Rica to the Panama Canal Zone to supply our forces during World War II, when trucking facilities would have been much more economical.

There can be no doubt that the accelerated program for completion of the Inter-American Highway will prove to be the most significant concrete action in which the United States has ever participated in Central America. The highway will have the effect of accelerating the virtual transformation of these 6 small countries within 2 decades. When one considers (*a*) the magnitude of the increase in the number of automobiles operated by citizens of the United States; (*b*) the rapidly increasing tendency of United States citizens to travel, particularly southward; (*c*) the continuing economic-leveling process in the United States which makes it possible for a steadily increasing percentage of the population to travel in their own automobiles; (*d*) the trend toward longer vacations; (*e*) the trend toward increased vacationing in the wintertime; (*f*) the trend toward earlier retirements; (*g*) the ease with which it will be possible to reach the gateways to Mexico when the great new arterial-highway system is constructed in the United States; and (*h*) the eventual psychological attraction of an interesting highway through a new environment, along with the steadily multiplying factor that will arise from the increased prosperity of Central America, Mexico, and Panama that will enable citizens of those countries to travel reciprocally, the possibilities of private passenger traffic on the Inter-American Highway can be considered to be tremendous. When one adds to this the potential passenger-bus and motortruck traffic, there would seem to be little doubt but that the Inter-American Highway will, in the next 10 or 20 years, develop into one of the world's great thoroughfares.

These are the general aspects of what may be anticipated when the remaining 175 miles of the Inter-American Highway have been completed. Now, for some specific information on the effect of the highway on each of the six countries through which it passes.

1. GUATEMALA

Completion of the highway should greatly stimulate the development of Guatemalan agriculture. It will permit increased cultivation of wheat, corn, and beans, the nation's main source of food. Larger supplies of vegetables and the ease with which they will be transported over the highway should result in lower food costs to the Guatemalan consumer and increased exports to El Salvador.

Production no longer will be restricted by muleback transportation. The highway will make readily accessible the forest reserves of the nation. The facility of transporting products from the rich coffee, corn, rice, cane, tobacco, and cattle lands of the southeast to Guatemala City and the other chief centers of consumption will greatly benefit the general economic climate of the nation.

In industry, one may expect exploitation of mineral deposits heretofore inaccessible; ease and economy of transport will stimulate greater investments, and may even lead to a mining boom. The textile, tanning, brewing, liquor distilling, earthenware, cigarette, and shoe industries undoubtedly also will receive new stimulus from the highway's completion.

The inevitable increase in automotive traffic will create an import demand for automotive vehicles, and promote the development of related activities such as service stations, garages, tourist facilities, etc. Truck and bus imports in particular are expected, as well as two-way tourist flow to and from the United States.

The highway will be linked with practically every section of Guatemala by feeder roads either projected or under construction. The highway already con-

nects with the coast-to-coast railway network and the air network, both centered at Guatemala City.

2. EL SALVADOR

The Inter-American Highway in El Salvador is virtually completed. In summary, the highway links El Salvador's four main cities, it carries all of the commodities which the country trades with its neighbors, and it serves as the main trunk for a majority of the country's feeder roads. These roads, in turn, provide an outlet for coffee and cotton, which otherwise would be inaccessible.

El Salvador looks to the completion of the highway in the remainder of the countries through which it passes. With the opening of the Guatemala-Mexico stretch, El Salvador anticipates a deluge of tourists. For this eventuality, a $3 million hotel is presently under construction in San Salvador. A new hotel, which will overlook the famous Izalco Volcano, is nearing completion. Together with these facilities, one confidently can expect the advent of motels, service stations, and related businesses.

3. HONDURAS

Although the Inter-American Highway only passes through the narrow southern "neck" of Honduras, it already is a highly important route over which the products of the country and of El Salvador are transported. From El Salvador, Honduras imports the bulk of its gasoline, which otherwise would have to enter Honduras from its north coast (at considerable cost). In addition, Honduras imports finished products, principally cloth and manufactured goods. To El Salvador and over the highway go Honduran cotton, coffee, and lumber. The two chief Honduran industries to have benefited so far from the highway are the bus and trucking businesses.

In the future, Honduras expects a meteoric rise in tourism and the development of all of the tourist services. The completion of the highway, as well as of the important feeder roads whose construction it will promote, will also make available 352,000 hectares of land for cultivation. This has been termed some of the most fertile land in the nation; at present, the region is virtually inaccessible.

4. NICARAGUA

The importance of the Inter-American Highway to Nicaragua at present is largely its impact on the agricultural economy of the country. In 1956, Nicaragua's coffee and cotton exports (most of which reached the ports via the highway) more than paid for the $43.2 million worth of imports from the United States. Almost 70 percent of Nicaragua's foreign commerce passes through the ports of San Juan del Sur and Puerto Somoza, which are linked to the areas of production served by the highway.

Furthermore, the transportation costs no longer need be a stifling factor in the economic growth of the country. Whereas oxcart charges (over unimproved roads) vary between 50 and 75 cents per ton-mile, truck charges currently are 8 to 10 cents per ton-mile. Largely as a result of this, the country's coffee production is expected to increase by 100 percent over the next 4 years.

The highway supports all of Nicaragua's feeder roads, including the Rama Road. So important to Nicaragua is this road system that one-sixth of Nicaragua's budget (or $7 million) is allotted to it each year.

Upon its completion in Central America and Panama, the highway will afford Nicaragua the additiona benefit of tourism. Three hundred additional cars per month are expected to pass through the country. Assuming that these will carry an average of 2 persons per car, who will spend approximately $100 each, the total increase in tourist expenditures is estimated at $620,000 per year. The tourist and related industries will grow, as will the general demand for imports, with the rise in the standard of living which will accompany the economic strengthening of Nicaragua.

5. COSTA RICA

The Inter-American Highway in Costa Rica, as in the other countries of Central America, has promoted the development of agricultural and industrial production. Within the country, the highway is partly responsible for the expansion of cattle and rice farming, thus contributing to the self-sufficiency of the country. Cattle raising may become a large-scale industry, as suggested by the near completion of two new slaughterhouses. (One of these, together with a

meat-storage plant, is being installed near Puntarenas by a group of American investors.) The highway provides the principal route over which Costa Rican manufactured goods—paint, insecticides, margarine, fertilizer, to name but a few—are traded with Costa Rica's neighbors.

In the development of the San Isidro region to the south of San José, Costa Rica provides an excellent example of the influence of the highway on a heretofore relatively isolated community. San Isidro's population in 1950 was approximately 15,000. San Isidro now is connected with San José, 72 miles to the north, and in 1956 had a population in excess of 30,000. In other words, its population doubled in 6 years, largely owing to the highway.

In May of 1955, the highway connection with Nicaragua was completed. As a result, the number of tourists who visited Costa Rica in 1956 exceeded by 20 percent (or 5,000) the number in 1955. With the final completion of the highway, the traffic from the United States, Panama, and the Central American States is expected to be considerable.

6. PANAMA

Panama anticipates, with the opening of the Inter-American Highway, the development of its resources of the interior, increased agricultural production, improved marketing conditions, and general economic expansion and stability. Coupled with the highway, Panama's projected feeder-road system will penetrate large, isolated sectors of the country, permitting new sources of agricultural products to be released to existing and new urban centers. As transportation facilities improve through good roads, market outlets for agricultural products will stimulate purchasing power for essential products, including modern agricultural implements, trucks, lighting equipment, refrigerators, etc., which today are not within the possible reach of farmers.

Inadequate transportation facilities have retarded initiation of primary educational and health programs in the interior. The highway will make such programs possible.

It is estimated that tourists arriving in Panama over the highway in 1961–62 will surpass the number entering the country at present by air and ship. (Last year, such tourists spent approximately $5 million in this crossroads of the world.) The highway will provide an artery for tourist travel in Central America, with access to the highway system in the United States. Some steamship lines anticipate offering attractive tourist rates for return travel and for shipping automobiles to the eastern and western seaboards of the United States.

The highway will particularly stimulate enterprises complementary to tourism, as well as the trucking, bus, power, and communications industries.

IN CONCLUSION AND SUMMARY

The rapid completion of a hard-surfaced and attractive Inter-American Highway linking the United States and the countries through which it passes is of great importance for the economic and political development and stabilization of the whole Central American region, and for the enhancement of the mutual interests of, and the relations between, the United States and Guatemala, El Salvador, Honduras, Nicaragua, Costa Rica, and Panama.

COST OF COMPLETION OF PROJECT

Mr. PRESTON. This $10 million will complete this project, period? You won't be back for any more money?

Mr. TALLAMY. No, sir. I won't guarantee that.

Mr. PRESTON. That is a horse of a different color.

Your justifications on page 1 say that.

Mr. TALLAMY. Let me explain that.

Mr. PRESTON. You had better explain it. I am about in a mood to leave this road unfinished. I have heard promises until I am not willing to accept any more. Not from you but from your predecessors.

Mr. TALLAMY. Let me tell you what I think about it. We believe we can complete this road with the $10 million if we do not run against

some serious slides or act of God between now and the time of completion.

Mr. PRESTON. If you will plant kudzu vines on all these slopes I will guarantee a billygoat can't eat the stuff off. It is the best thing that has been found in this country to prevent this condition. The roots go so deep it takes a hog to get down to the roots and destroy it. It is a vine that grows well in the tropical area. These contingencies you are talking about disturb me.

Mr. TALLAMY. I must in fairness to you tell you that that can happen. I also want to tell you that in order to take care of the slides that have happened in the past, from last September through May, over a 9-month period we have experienced a cost of about $2 million, and it is necessary in order to do this job within the $10 million to cut every possible corner that can be cut, and we are determined to do that.

I have established a regional office in Costa Rica for the purpose of giving personal direction to this entire project locally, rather than from here.

We are experimenting on some bituminous paving in Guatemala, which I think is highly successful—I am sure it is highly successful, and which will save us some money. We are going to have to use a type of pavement down there which is a modification of what they are presently using, but it is a strong and durable, good bituminous pavement, in my judgment, and barring slides I believe we can finish this job with the $10 million. You should know that. I cannot guarantee it to you.

Mr. PRESTON. I have no objection to local countries repairing these slides as far as I am concerned. We have done a magnificent job of cooperating with the nations. We have done something unparalleled in history, in putting up two-thirds of the money for building this road, and they stand to benefit much more than we, I am certain, although we have had glowing pictures painted of the benefits that would accrue to the United States.

The initial figure to build this highway was what? Do you remember the initial figure estimated?

Mr. ALLEN. $74 million——

Mr. PRESTON. Let's go back to the real basis. It was way down, something like $40 million.

Mr. ALLEN. That goes back a good many years.

Mr. PRESTON. Now we are paying $84 million to finish the job. Therefore, as far as I, as one member of this committee, am concerned I will go to the floor and oppose any more for this project down there. Let the local countries finish it. We have done enough. This will be a hard-surfaced road all the way when you finish?

Mr. TALLAMY. Yes, sir.

Mr. PRESTON. Tell your people down there they really have to cut the cloth close. I think this committee is of the same opinion, that we would not be in a very receptive mood to receive another supplemental appropriation for this project.

Mr. TALLAMY. I certainly will do my best.

Mr. PRESTON. This criticism is not leveled at you. These increases came about before your time. No doubt they were unavoidable. I am not really criticizing anybody. Circumstances developed which

could not be anticipated, many circumstances, but it has just grown to the point that it certainly makes me feel that we should not invest any more money in this road.

We have heard testimony, pages and pages and pages in the past. We understand the situation. You have given us a very good statement, and I must compliment you on having all this information in your mind. You are apparently very familiar with the situation all the way along the road.

Mr. PRESTON. Mr. Bow?

Mr. BOW. I just want to say that I agree with the chairman on the fact that an additional 10 million ought to close this thing up. That is all, Mr. Chairman.

Mr. PRESTON. Thank you, gentlemen.

MARITIME TRAINING

SALARIES AND EXPENSES

Mr. PRESTON. We will now take up the maritime training item. We shall insert in the record pages 5 through 9 of the justifications.

(The justifications follow:)

Maritime training

Request $175,000

PURPOSE AND NEED FOR SUPPLEMENTAL FUNDS

The purpose of this supplemental request is to cover increased salary costs of uniformed personnel of the maritime training program and to provide for increases in several other areas.

Public Law 85–422, 85th Congress, provided for specific salary increases for career service personnel. The Comptroller General in decision B–115145 has ruled that section 509 of the Career Compensation Act of 1949, as amended, operates as a positive statutory prescription of the rates of pay and allowances set forth in titles II and III of the 1949 act, for enrollees of the Maritime Service and has superseded the authority vested in the Maritime Administration to fix rates of pay of such persons. There is no discretion on the part of the Maritime Administration as to whether the new rates will be paid. The new rates became effective June 1, 1958. Funds are required for United States Maritime Service personnel for the full year in 1959.

In addition to the salary increases, certain other conditions of the program require supplemental funds.

The operation of the Merchant Marine Training Academy at Kings Point, N. Y., presents a unique problem in the field of fiscal management and administration of a Federal installation.

Each August this activity enrolls approximately 300 cadets in a training program which will continue for 4 years. Cadets spend 3 of these years at the academy and 1 at sea. This enrollment means that the Government has made a commitment not only to conduct a course of instruction but to provide for the feeding, clothing, housing, medical care and general welfare of approximately 700 cadets.

The essential services required to carry out the serious responsibilities involved in a program of this nature leave virtually no program flexibility to offset increased fund requirements due to price increases, reductions in attrition, mechanical breakdowns at the installation and other such factors beyond our control.

Certain minimum faculty and supporting staff must be maintained. If cadet attrition does not occur as anticipated, or if there are more academic "setbacks" than contemplated, additional faculty must be made available to cover the increased teaching loads.

Likewise in either of these cases additional food services, uniform and textbook allowances, heat, light and other consumptive items must be provided. Uncontrollable events such as the flu epidemic, unusually cold winters, faculty

separations, State of residence of cadets relative to travel allowances, and rising costs all must be provided for. There is no possibility for elimination or curtailment of these activities. They simply must be met as they occur.

The above outlined items indicate that a revision in the estimate is necessary to meet conditions as they are now contemplated in fiscal year 1959.

JUSTIFICATION

1. Military pay raise, $107,000

Increases are required for personal services and related costs as a result of enactment in fiscal year 1958 of military pay raises which affect USMS personnel. The estimate provides for the annual costs of the increase projected for a full year in 1959. Requirements are calculated as follows:

New annual rate	$1,020,172
Previous annual rate	924,954
Difference	95,218
Longevity[1]	5,214
Total	100,422
01 Personal services (rounded)	100,000
07 Insurance	500
11 Retirement	6,500
Increase	107,000

[1] Requirements are based on the application of new longevity increases to current staff.

2. Increase in average attendance, $36,000

Fiscal year 1958 is the first year under the new system of congressional appointments. It is also the first year during which there has not been a mid-year graduation class. Both conditions will prevail in the future.

At the time of developing the original estimate for fiscal year 1959, no experience factors were available upon which to base requirements other than those developed under the old systems which were used adjusting only for a single graduation class.

As a result, the original estimate for fiscal year 1959 assumed an attrition rate based on 1957 experience and projected an average attendance of 670 in 1959 equal to the 670 estimated in 1958. Analysis of current attendance through March 31, 1958, indicates that the attrition rate is not following the previously established patterns as anticipated.

The class of 1959 which it is now estimated will begin fiscal year 1959 at approximately 240 will result in a graduation of about 224. Coupled with the decreased rates in the fourth and third classes also developing in 1958, all indications point to a higher average attendance than originally contemplated.

Based on the currently estimated matriculation figures for 1958, the pattern indicates an average of 710 for 1959, an increase of 40 over that forecast in the original estimate.

It is not practical to reduce the incoming class in 1959 because State quotas for 1959 have been set, nominees have already been examined (1,600), and the congressional appointments against the quotas will soon be forthcoming.

Two items are directly related to average attendance. These are food services and uniform and textbook allowances. Additional funds in the amount of $31,000 are requested.

The balance of $5,000 requested for increased attendance is composed of costs for other consumptive items directly related to the student body. This small increase provides for additional medical supplies, fuel, and service contracts.

3. Increased costs, $2,000

There have been several increases in basic rates in communications, utility and other procurement supply items not anticipated in our 1959 budget. Additionally, the increased average cadet attendance will normally result in a greater consumption of utility services, i. e., gas, electricity, as well as in a requirement for additional operating supplies and materials.

The additional $2,000 will provide for the increases in certain utility rates and communication services.

4. Program changes, increase $30,000

There are two basic changes in the training activity which were not apparent at the time the original request was developed. These are (1) an increase in emphasis on faculty staff, and (2) an increase in the number of plebes entering from States of greater distance from the Academy.

(*a*) *Personal services and related items, increase $26,500.*—During 1958 two situations relative to the faculty staff have occurred in the constant effort to increase the academic standards and level of instruction. Both have affected the average salary rates of the total staff. (1) On the basis of administrative and academic board review, eleven instructors received promotions in rank, and (2) it has been necessary in order to assure full teaching coverage in all areas to realine the staff within the current total authorized complement.

The effect of both has been to increase the average salaries which can only be absorbed through a reduction in man-years of employment. Since no reduction is possible in the teaching staff, the burden of reduced employment has fallen on the security, maintenance, and supply functions. The ill effect of reductions in these areas is further magnified because the average salaries for these functions are considerably lower than those of the faculty staff. Consequently, the promotions and the realinement of positions from nonfaculty to faculty has resulted in considerable loss in man-years in the areas mentioned.

The increase of $26,500 will provide for the restoration of employment in the affected areas. It will assure not only the continued high quality of instruction but also the adequate maintenance of buildings and grounds and provision of the necessary supporting services.

(*b*) *Plebe travel, increase $3,500.*—The method of selecting cadets through the congressional appointment procedure has caused increased interest in the Academy on the part of candidates from States at greater distances from Kings Point. It also appears to have reduced the attrition in the plebe classes previously experienced.

This situation has become apparent with the present plebe class. The present estimate indicates an increase of $3,500 required to provide for the additional mileage to be encountered in 1959 for plebe travel.

Mr. Moore. We have one small item in the Maritime Administration called maritime training, which we have a statement on and we can either file it for the record or read it for you.

Mr. Preston. I wish you would insert it in the record at this point.

Mr. Moore. We will be glad to.

(The statement referred to follows:)

MARITIME TRAINING

House Document 394 provided $175,000 for the appropriation "Maritime training" including $107,000 for military pay increases authorized by Public Law 85–422, and $68,000 for other purposes. In accordance with the determination of the subcommittee to defer action on pay increase items the following remarks will be limited to the $68,000 for other costs related to the Kings Point Academy. These items include $36,000 for increased cadet average attendance, $2,000 for increased costs of utilities, and $30,000 for increases due to program changes and adjustments.

The amount for increased average attendance is required primarily for food services and uniform and textbook allowances. The original estimate of 670 for 1959 assumed an attrition rate comparable to 1957 experience adjusted for elimination of midyear classes. Actual attendance through 1958 has indicated a deviation from the normal attrition pattern upon which the estimate was based. This change in trend apparently occurred as a result of the new congressional appointment system. Better screening and selection, greater competition, and higher standards for congressional nomination have tended to create a more stable student body and one more capable of meeting the high academic requirements. Consequently, there has been considerably less attrition. Presently estimated matriculation figures will result in an average attendance of 710 in 1959, an increase of 40 over that originally forecast; $31,000 will cover the additional

food and uniform and textbook requirements. The balance of $5,000 will provide for other consumptive items related to the size of the student body.

Several increases in the basic rates of communication services, utilities, and supply items require an additional $2,000 to maintain minimum operational standards.

The major program change involves personal services. To assure full teaching coverage in all areas it has been necessary to place greater emphasis on faculty positions at the expense of operational staff. This realinement within total authorized positions has resulted in a loss in average employment in the security, maintenance, and supply functions. In the constant effort to maintain a high quality faculty, 11 promotions have been effected which were not anticipated in the original estimate. An increase of $26,500 will restore the lost employment resulting from the promotion costs.

The first year under the congressional appointment and State Territorial quota system has resulted in a cadet complement representing a wider geographical area distribution than heretofore experienced—$3,500 is required to pay increased travel expenses for the greater mileages now anticipated .

It is not possible to absorb any of these additional costs within the regular appropriation. Because of the nature of the program, the only area of funding in which there is any flexibility is in the amount provided for repairs to the buildings and facilities. The total amount of $101,200 provided for this purpose is only $33.200 more than required for the increased costs reflected in this estimate. It is essential that the total repair program be continued as planned. The condition of the buildings is such that there is an urgent need for acceleration of repairs rather than further deferral. The reports of both the congressional and academic boards, as well as the report of survey made by the General Services Administration, have emphasized the need to increase the rate of repairs to buildings and restoration of the facilities. For these reasons the full amount necessary to cover the additional costs should be provided as supplemental funds.

Mr. PRESTON. That deals with the matter of some repairs the committee had previously spoken to you about?

Mr. MOORE. No. This deals with additional moneys that are needed for the cadets that are in the training. We have more cadets than we originally thought we would have, probably due to the new manner in which the House of Representatives are nominating the cadets. We have gone up from 670 to 710.

Mr. PRESTON. This is a necessary item?

Mr. MOORE. This is an essential item. We have no money to take out from our maintenance or anything. We will be up next year with that item.

Mr. PRESTON. I am certain you cannot take it out of maintenance.

Mr. MOORE. At this time could we thank you for your courtesy in hearing us through all of these various things.

HYDROGRAPHIC SURVEY OF COEUR D'ALENE LAKE

WITNESS

HON. GRACIE PFOST, A REPRESENTATIVE IN CONGRESS FROM THE STATE OF IDAHO

Mr. PRESTON. The committee will come to order.

The committee is glad to have before it this afternoon one of our distinguished Members of Congress, Congresswoman Gracie Pfost of Idaho. She has an item she wishes to bring to our attention. I believe that you have a prepared statement, do you not, Mrs. Pfost?

Mrs. PFOST. Yes, I do, Mr. Chairman.

Mr. PRESTON. I want to say at the outset that we feel your appearance here this afternoon has added something to our committee. We

have been dealing with men so far during the supplemental hearings. We are delighted to have one of our female colleagues appear.

Mrs. Prost. Thank you very much, Mr. Chairman.

Mr. Chairman, I very much appreciate the time to appear before this subcommittee today. I know how busy you are, and I will make my presentation as brief as possible.

I am here to ask you for the sum of $43,000 which the Coast and Geodetic Survey can use for a hydrographic survey and chart of Lake Coeur d'Alene, located in northern Idaho in the Congressional District I represent.

Coeur d'Alene is in the center of an extensive lumbering industry, and the lake is used for transporting logs 12 months out of every year, except in the 1 year in 7 when it freezes over for about 2 months. Between 20 and 25 tugs operate on the lake, pulling booms of logs. Approximately 175 million board-feet of lumber are transported annually.

Sunken logs have formed pockets on the lake bottom, and there could be a substantial salvage operation on the lake if its depths could be determined.

In addition to the tugs pulling logs, there are two pile-driving operators, one of whom transports a great deal of merchandise and heavy equipment. There are also 10 or 12 commercial passenger boats in operation on the lake.

Coeur d'Alene is one of the most beautiful lakes in the Pacific Northwest—in fact, it has been called 1 of the 5 most beautiful lakes in the world. It is a recreation paradise. The fishing is excellent and so is the swimming. Sailing and powerboat races are annual events. Many summer homes line its shores, and the city of Coeur d'Alene circles its northwestern end.

Since the lake is only a few miles from the Washington State line, it has become a recreation center for the service and civilian personnel located at the air and Navy installations in Spokane. Every summer its facilities becomes more and more crowded. Aud every summer the boating accidents and drownings increase. The situation is now becoming dangerous, and something must be done about it.

It is most important that jetties and breakwaters be built to protect boating facilities, but their planning depends to a great degree on the depths involved. A hydrographic map has therefore become a necessity.

Such a map would also be a great aid in planning sanitation projects for the city, in making greater use of the lake as a waterway, and for commercial marine use of the lake. I am attaching letters to this statement which explain these points in greater detail.

I want to point out that making funds available for the Coeur d'Alene survey would not set a precedent. The Coast and Geodetic Survey has made a number of similar surveys, including a survey of Lake Tahoe on the California-Nevada border in 1922, Lake Okeechobee in Florida in 1924–25, Lake Roosevelt in Washington State, 1947–48, and Clear Lake, Calif., 1949.

I also want to stress that I am not asking for a new authorization. There is authority under the existing law for the work to be done. Earmarking specific funds would make it possible to survey Coeur d'Alene Lake in the next 2 years. Otherwise, it will be several years until it is reached in normal sequence.

What I'm really trying to do is to help save some lives, and make possible a more orderly development of the improvements I know must be made in the Coeur d'Aline area.

Congress is already beginning to think about the importance of charting waters which are widely used by small boats. As you know, $35,000 was recently included in an appropriation bill to finance a pilot project for preparing charts for small-boat men, in an effort to prevent future accidents.

I have had several conferences with Rear Admiral Karo, the Director of the Coast and Geodetic Survey, on this matter; and he sent the Coast and Geodetic Seattle district officer to Coeur d'Alene to confer with city officials there. Captain Kirch reported that the letter of justification submitted by Mr. L. D. Brownson, city engineer, was factual and correct.

Admiral Karo requests that because of the necessity of having suitable weather for photography, geodetic control, and hydrographic surveying, and the need for properly coordinating these factors, that the $43,000 be made available over a 2-year period. Correspondence with Admiral Karo is also attached, and I ask it be made a part of the record of these hearings.

Thanks for your courtesy in listening to me.

(The correspondence referred to follows:)

DEPARTMENT OF COMMERCE,
COAST AND GEODETIC SURVEY,
Washington, May 25, 1958.

HON. GRACIE PFOST,
House of Representatives, Washington, D. C.

DEAR MRS. PFOST: This has further reference to your request of May 12, 1958, for information as to the cost of a complete hydrographic survey of Coeur d'Alene Lake, Idaho.

A survey of this kind involves three separate operations which must be accomplished in logical sequence. The first requirement is the establishment of geodetic control; that is, the determination of latitude and longitude of selected points which will form a rigid framework for the final map. These stations can be established by extending existing triangulation from the north and west of the lake.

Once the basic control is established the shoreline of the lake can be precisely mapped by photogrammetric methods. The air photographs and resulting shoreline manuscript are used to locate a large number of points or signals on the shores of the lake.

After a sufficient number of signals have been built and located the hydrographic survey can be started. These signals are used by the hydrographer in fixing the positions of soundings.

Our estimates of the costs for this project are:

Triangulation surveys	$10,000
Photogrammetric surveys	15,000
Hydrographic surveys	18,000
Total	43,000

In order that the project can be completed in one season the field work should begin as soon as the snow has melted in the spring. A field season of at least 4 months will be required for this work.

A member of my staff will be available to explain any of the details involved in the above estimate.

Sincerely yours,

H. ARNOLD KARO,
Rear Admiral, Coast and Geodetic Survey, Director.

DEPARTMENT OF COMMERCE, COAST AND GEODETIC SURVEY,
Washington, D. C., June 18, 1958.

Hon. GRACIE PFOST,
House of Representatives,
Washington, D. C.

DEAR MRS. PFOST: This is in reply to your letter of June 14, 1958, in which you inform us that the Senate Appropriations Committee considered the subject of hydrographic surveys of Coeur d'Alene Lake, Idaho, and your requirement for further information.

On June 10, 1958, Captain Kirsch, our Seattle district officer, conferred with city officials and others at Coeur d'Alene, Idaho, concerning their request for a hydrographic survey of Lake Coeur d'Alene. His visit included an inspection of part of the project area and discussions with other interested officials of the State, county, and public interests. In general, the letter of justification submitted to you by Mr. L. D. Brownson, city engineer, was reported to be factual. The city of Coeur d'Alene cannot provide any assistance to the survey operations, and this project will require the use of Coast and Geodetic Survey personnel and equipment entirely.

In addition to the hydrographic survey and chart of the lake, the city of Coeur d'Alene desires a large-scale detailed topographic map of the city. The Bureau normally does not undertake this type of mapping, as we consider such large-scale mapping to be in the field of private enterprise which photogrammetric mapping companies are quite qualified to undertake. If funds were included for this work (which our original estimates did not consider), we would plan to contract large-scale mapping to a private company if a reasonable bid could be obtained.

Considering the report of Captain Kirsch, it is our opinion that our original estimate was reasonably accurate. If we include a provision for the large-scale detailed topographic map of the city and a small amount of contingencies, we suggest that an amount of $50,000 be provided for this project. Because of the factors involved requiring suitable weather for photography, geodetic control, and hydrographic surveying and the need to properly coordinate these factors, the funds should be made available for expenditure over a 2-year period.

Sincerely yours,

H. ARNOLD KARO,
Rear Admiral, C. and G. S., Director.

CITY OF COEUR D'ALENE,
Couer d'Alene, Idaho, May 29, 1958.

Hon. GRACIE PFOST,
House of Representatives, Washington, D. C.

DEAR MRS. PFOST: Thank you for your prompt action in behalf of our request for a hydrographic map of Coeur d'Alene Lake.

Generally speaking, the advantages accruing from an accurate hydrographic map can be broken down into the following classifications:

I. ADMINISTRATIVE AND GOVERNMENTAL

A. County assessor's office: At the present time I have a letter from Mr. C. W. Neider and a copy of it has been sent to you.

B. Coeur d'Alene Waterways Commission: I have had preliminary talks with Ray Jones, chairman and Marc Souther, secretary. They will have a meeting in the near future but have indicated that such a map would be of value to them. This commission is appointed by the county commissioners for the purpose of spending county tax money in the improvement of local waterways. I will have them contact you directly as soon as possible.

C. County sanitarian: The Kootenai County sanitarian is very interested in this project and he has promised to send me a letter stating his viewpoint. He has also promised to send a copy directly to you.

D. Miscellaneous governmental agencies: The State highway department, Bureau of Land Management, and the Forest Service have been contacted and the local heads have indicated that in one way or another such a project would be beneficial. Points mentioned were the extension of the triangulation network and a more accurate map of the shoreline.

II. COMMERCIAL

A. Coeur d'Alene Lake is a storage area and the lake level has been raised to provide for a greater storage area as well as greater power output. A hydrographic map could be of value in case the lake level were to be changed in the future.

B. A commercial operator was contacted and his immediate reaction was favorable. For salvage work, a hydrographic map would be very valuable. Commercial marine use of the lake is estimated to be at least $500,000 annually.

III. RECREATIONAL USES, PUBLIC AND PRIVATE

A. The city of Coeur d'Alene has attempted over a period of years to improve the portion of the waterfront that is city controlled. We have made good progress, but still have a long way to go. One of our problems is in securing protection to boating facilities. Planning for jetties or breakwaters depends to a great degree on the depths involved. A hydrographic map is necessary for this type of planning. This problem is one that is common to any place on the lake in which offshore improvements are contemplated. A hydrographic map would be valuable a long time in the future as well as right now. Much of the shoreline is privately owned. It is estimated that its length is 150 miles. Lake property is generally sold by the front foot and its value runs between $10 to $100 per foot. Using a minimum figure of $10 per front foot and a conservative distance, the total present potential value of the lake frontage would be about 7 or 8 million dollars. The lake front is a long way from being developed, but recreational uses are increasing rapidly. In aiding the development of this lake, the entire area will benefit. Tourists and recreation are a basic ingredient in our economy.

The above is about all that I can get at the moment. As several of the organizations and individuals get together that I have mentioned briefly I am certain additional support will be forthcoming.

One additional idea I had is the possibility of obtaining additional information of the character and position of the underlying strata on the lake bottom at the same time that soundings are taken. I do not know if the C. and G. S. is equipped for this or not. I believe there is a real possibility that the United States Geological Survey might be interested in this survey if this is done.

Thank you for your efforts in our behalf.

Very truly yours,

L. D. BROWNSON, *City Engineer.*

PANHANDLE DISTRICT HEALTH UNIT HEADQUARTERS
AND KOOTENAI COUNTY OFFICE,
Coeur d'Alene, Idaho, June 3, 1958.

HON. GRACIE PFOST,
House of Representatives,
Washington, D. C.

DEAR MADAM: Because of the possibility of a hydrographic survey of Coeur d'Alene Lake, I would like to enumerate the reasons why the local health department is interested.

In the past few years there has been a great deal of domestic building around Coeur d'Alene Lake and most of the new residents are taking water from the lake for domestic purposes. We would like to have knowledge of water currents and water depths. Also, it is important to know the composition of the land surrounding the lake, because sewage from the newly built homes should be absorbed into that soil so it could not drain into the lake.

Coeur d'Alene Lake does receive much pollution and contamination, so any knowledge of the lake would help in determining what becomes of this contamination.

Yours very truly,

DONALD J. BOUGHTON, *Acting Director.*

27544—58——41

MAY 29, 1958.

Mr. L. D. BROWNSON,
City Engineer, Coeur d'Alene, Idaho.

DEAR MR. BROWNSON: It has been called to my attention that there is a possibility of a Federal survey contemplated by special appropriation for a hydrographic survey of Coeur d'Alene Lake.

I am pleased to hear of this report and assure you that such a survey will be of great benefit to Kootenai County and especially to the assessor's office, as a correct map of the shoreline of the lake would be an asset to this office in establishing our real property boundaries, beach facilities, etc.

Thanking you for calling this to our attention and assuring you of the full cooperation of this office, I remain,

Yours very truly,

C. W. NEIDER,
Assessor, Kootenai County, Idaho.

DEAR MRS. PFOST: We appreciate your endeavor in the above survey, and assure you of our cooperation here.

With kind personal regards, I remain

Yours very truly,

C. W. NEIDER.

Mr. PRESTON. Mrs. Pfost, suppose you tell us something about the size of the lake.

Mrs. PFOST. It is approximately 30 miles in length, and I am not sure what its width is. It varies. It is probably 20 miles at the widest part, but most of the lake is much narrower.

Mr. PRESTON. Is there any point in the lake, Mrs. Pfost, where people boating would be completely out of sight of the land?

Mrs. PFOST. No. I do not think so.

Mr. PRESTON. How far at the widest point would it be to the land; 10 miles, would you say?

Mrs. PFOST. Ten miles would be the maximum.

Mr. PRESTON. In bad weather a shoreline could or could not be seen?

Mrs. PFOST. There is fog around this area, especially in the fall of the year. It makes flying very hazardous because of the evaporation from the lake.

Mr. PRESTON. You are saying this lake is hazardous because there are so many people using it in small boats, and they are having trouble running aground, running on to shoals or banks?

Mrs. PFOST. I can't say we are having any more trouble running aground on that lake than you would have on any other congested lake.

Mr. PRESTON. Are there shoals?

Mrs. PFOST. Yes.

Mr. PRESTON. Might yacht-type vessels strike bottom on them?

Mrs. PFOST. They tell me this is a real problem when the lake level is low the sunken logs are also a hazard to small craft.

Mr. PRESTON. Do you have any figures on the casualty rate?

Mrs. PFOST. I am sorry, I do not have, Mr. Chairman.

Mr. PRESTON. By year.

Mrs. PFOST. I am sorry I do not.

Mr. PRESTON. Of your own knowledge, you live in the general area——

Mrs. PFOST. Yes. I live something like 400 miles south of this particular lake. I have a rather long district so my home is about 400 miles south of Lake Coeur d'Alene.

Mr. HORAN. Drownings are not infrequent on that lake, but I do not have the figures. It is a fact.

Mr. PRESTON. Will any part of these funds be used for establishing markers?

Mrs. PFOST. I believe so, but am not sure.

Mr. HORAN. My colleague is certainly right. The people of Spokane use Coeur d'Alene Lake in droves. An awful lot of folks have nice summer homes on it, too.

Mrs. PFOST. Yes. They are having quite a few regattas there. This week the Diamond Cup Derby is on.

Mr. HORAN. They have logrolling there too.

Mrs. PFOST. Yes, both sport and commercial. The lake is used by the lumber mills to hold their logs. They hold them for weeks on end. You can fly over and see nothing but logs in certain areas of the lake.

It isn't uncommon in a fog, as Congressman Horan well knows, for one of the small boats to run into the logs that are held near the shoreline in some areas of the lake.

Mr. PRESTON. Of course, Mrs. Pfost, if you had a hydrographic map unless you could see you wouldn't know whether you were going to run aground or not.

Mrs. PFOST. I agree with you on that.

Mr. PRESTON. Could you tell me, Mrs. Pfost, what is the deepest draft vessel that uses the lake? Do you have that information?

Mrs. PFOST. I do not have that information.

Mr. PRESTON. Do you have tugboats or tugboat types of vessels that move large rafts of logs?

Mrs. PFOST. Yes.

Mr. PRESTON. Thousands of logs at a time, or hundreds.

Mrs. PFOST. Yes. They would tug behind them thousands of logs.

Mr. PRESTON. That would be a fairly sizable vessel, then, that would be moving the rafts?

Mrs. PFOST. Yes. It would be a good-sized vessel.

Mr. PRESTON. I would not expect you to answer all these questions. It seems to me you have given us a great deal of information about this for one who lives 400 miles away.

Mrs. PFOST. Thank you. I go to Lake Coeur d'Alene quite frequently. I do not have an opportunity to enjoy its facilities as often as I would like. As I mentioned earlier one of your recent appropriation bills has carried a $35,000 item for a pilot project in furnishing charts for the small-boat men of the country. I think you have recognized, or the Congress has recognized, that the small-boat people do face a real problem.

Mr. PRESTON. There is no doubt about that. There is, of course, no end to this business of how far we would go. I think we first must deal with the larger lakes and the ones that are used the most.

Mrs. PFOST. Yes.

Mr. PRESTON. The high speed of the small craft has presented difficulties because formerly when the speed of pleasure boats was slow,

there was little likelihood that even grounding or the striking of a submerged object would cause any trouble. With the outboard motors that go up to, I think, 50 horsepower now, they operate at such terrific speeds, an accident could result in the loss of life of everybody aboard. It has changed the picture considerably.

Mrs. PFOST. The thing that has changed the picture with this lake is the fact that the lake level fluctuates a great deal on the drawdown for power purposes of the Washington Water Power Co.

There was a time a couple of years ago when one of the mills frantically got in touch with me and requested me to ask Washington Water Power Co. officials to close the gates, which they did. They had drawn the lake down so low that it was impossible to get the logs up the ramp of the Ohio Match Co., and they were going to have to close their plant. They would have shut it down the following day had we not been able to have the gates closed.

Mr. PRESTON. Mrs. Pfost, do you know whether the $10,000 for triangulation surveys includes the establishing of navigation markers along the shoreline, or is it merely a triangulation survey?

Mrs. PFOST. I am not familiar enough with the terminology to answer you.

Mr. PRESTON. The reason I asked the question is that if you establish soundings in a large lake and put them on a chart for navigation purposes in order that the boatman may know where his deep and shallow water is, he has to be able to identify where he is at the time. In the navigable salt-water streams there are either markers in the stream itself or markers on the shore that can be observed by the boatman.

It could be that there are sufficient landmarks in this area such as hills, mountains, or structures that could be used in lieu of shore markers.

I am wondering if your local people who are interested in this project have mentioned whether they plan to ask the Coast Guard to put up any navigation markers.

Mrs. PFOST. I have had no correspondence to that effect, Mr. Chairman.

Mr. PRESTON. I believe the major need for this chart would relate more nearly to the lake improvements rather than navigation, because many pleasure crafts have fathometers which will tell them at a glance exactly how deep the water is at the point they are. A hydrographic chart could be of some help to an outboard motor man provided he knew exactly where he was at the time. But if the proposition of jetties is involved and the proposition of currents is involved, the hydrographic chart would be important to the local interests there.

Mrs. PFOST. I would assume naturally that those points should have markers or warnings of some kind such as buoys. Does that not come as a natural consequence?

Mr. PRESTON. I do not believe that is contemplated by this request from the community because if you are going to establish just a channel through the whole lake, a safe channel where all boats of certain draft would go, the Coast and Geodetic Survey could make a sounding and establish markers without even having the hydrographic map. It would enable the boats to travel the channel the length of the lake. I

think perhaps it is more from the standpoint of the needs of the surrounding area. The photogrammetric map would be of considerable value to your people.

I thought at first—I am afraid I made the wrong assumptions—that it was more from the navigation standpoint than from the other aspects you have later brought into your testimony.

Mr. HORAN. They have a very active outboard-motor club there. I attended one of their festivities last summer. There must have been better than 200 people there to exchange pictures. They are very active.

Mrs. PFOST. There are many conventions held in Coeur d' Alene and they bring their boats with them. But it is from the commercial angle that the survey is most needed.

Mr. BOW. Would you yield to me on that question? I wonder if you have given consideration to the authority to do this.

Section 883 (a). To provide charts and related information for the safe navigation of marine and air commerce, and to provide basic data for engineering and scientific purposes and for other commercial and industrial needs, the Director of the Coast and Geodetic Survey, hereinafter referred to as the Director, under direction of the Secretary of Commerce, is authorized to conduct the following activities in the United States, its Territories, and possessions:

(1) Hydrographic and topographic surveys of coastal water and land areas.

(2) Hydrographic and topographic surveys of lakes, rivers, reservoirs, and other inland waters not otherwise provided for by statute.

(3) Tide and current observations.

(4) Geodetic-control surveys.

(5) Field surveys for aeronautical charts—

and so on.

I wonder whether small craft such as you referred to, outboard and pleasure craft, come under the definition of navigation marine commerce.

Mrs. PFOST. I do not know. I can only say that I am not asking for a new authorization. The Coast and Geodetic Survey already has the authority, but because their funds are so limited, it would be several years before they could survey Lake Coeur d'Alene. Therefore the earmarking of these funds would simply step up the program so the survey could be made in the next couple of years rather than taking its natural sequence.

(NOTE.—Upon request of the chairman for information regarding commerce on the lake, Mrs. Pfost supplied the following, which is inserted in the record at this point.)

COEUR D'ALENE, IDAHO, *July 1, 1958.*

HON. GRACIE PFOST,
House Office Building, Washington, D. C.

DEAR MRS. PFOST: The following information is through the courtesy of Potlatch Forests and Lafferty Transportation Co. The number of tugs operating on the lake is 20 to 25. All the tugs are the pull-type. They pull booms of logs. Rafting has not been attempted, but may be in the near future. The lake is used for logging 12 months each year, except for approximately 1 year in 7 when it will freeze for about 2 months. Approximately 175 million board-feet are transported annually. Mr. Blessing, president of the Log Owners' Association, originally informed me of the potentially large salvage possibilities of recovering sunken logs. He was not available today for further comment. Washington Water Power has indicated their interest and they concur in urging this project. Mr. Wes Anderson, who operates a commercial passenger service, was contacted. He estimates that there are 10 or 12 commercially operated passenger boats on the lake. He is enthusiastic about the proposed hydrographic map. There are 2 piledriving operators, 1 of whom also transports a

great deal of merchandise and heavy equipment. However he was not available for comment. I hope this information will be adequate.

Sincerely yours,

L. D. BROWNSON,
City Engineer, City of Coeur d'Alene, Idaho.

Mr. FLOOD. I might indicate that while it is not necessarily a precedent, since maybe the question was never raised, but it has been indicated in the lady's statement that on several other lakes beginning back in 1922 up until a few years ago this same kind of thing has been done I presume for the same or similar purposes.

Mrs. PFOST. Yes.

Mr. FLOOD. While that may not necessarily be a precedent, maybe the question of jurisdiction or authority was never raised——

Mr. BOW. On some of the lakes I am familiar with there is some commerce.

Mr. FLOOD. There would be on Lake Okeechobee.

Mr. PRESTON. Yes; it carries a great deal of commerce. I have been over it fishing.

Off the record.

(Discussion off the record.)

Mrs. PFOST. I should like to call attention to the fact that some of the Senators have interested themselves in this appropriation. Of course, being a House Member, I was hopeful I might be able to get the item in on the House side rather than having to rely on the Senate.

Mr. PRESTON. Off the record.

(Discussion off the record.)

Mr. PRESTON. Do any of you gentlemen have any questions? I want to compliment you on your thorough knowledge of this question and the presentation. You have made an interesting presentation and it certainly will interest the committee to the point where we will consider very seriously your request.

Mrs. PFOST. Thank you.

Mr. HORAN. I join our chairman in complimenting my neighbor.

Mrs. PFOST. I appreciate that. I wish I knew more about boats but I am so busy I do not get a chance to familiarize myself with the boats that frequent this lake as much as I would like to.

Mr. PRESTON. Thank you very much.

SUBCOMMITTEE ON FOREIGN OPERATIONS APPROPRIATIONS

OTTO E. PASSMAN, Louisiana, Chairman

J. VAUGHAN GARY, Virginia
JOHN J. ROONEY, New York
WILLIAM H. NATCHER, Kentucky
WINFIELD K. DENTON, Indiana
HUGH Q. ALEXANDER, North Carolina
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JOHN TABER, New York
RICHARD B. WIGGLESWORTH, Massachusetts
GERALD R. FORD, Michigan
EDWARD T. MILLER, Maryland

WEDNESDAY, JULY 2, 1958.

ADMINISTRATION AND CONSTRUCTION OF UTILITY SYSTEMS, RYUKYU ISLANDS, ARMY

WITNESSES

MAJ. GEN. C. K. GAILEY, CHIEF, CIVIL AFFAIRS AND MILITARY GOVERNMENT
RODERICK GILLIES, DEPUTY CIVIL ADMINISTRATOR, USCAR
LYMAN HAMILTON, DIRECTOR OF FINANCE, USCAR
LT. COL. ARNO HERZER, POST ENGINEER, USARYIS
EDWARD W. O'FLAHERTY, CHIEF, ECONOMICS DIVISION, OCAMG
HENRY WOHL, CHIEF, ECONOMIC AFFAIRS BRANCH, ECONOMICS DIVISION, OCAMG
W. E. NOWELL, BUDGET OFFICER, OCAMG
JOSEPH S. HARBISON, CIVIL AFFAIRS SPECIALIST, OCAMG
COL. JAMES T. EWELL, CHIEF MILITARY PERSONNEL BRANCH, OFFICE, DIRECTOR OF BUDGET, ARMY
STUART H. D. FREED, BUDGET ANALYST ON CIVIL FUNCTIONS APPROPRIATIONS, OFFICE COMPTROLLER OF THE ARMY
COL. ROBERT M. WILLIAMS, DEPUTY CHIEF, CIVIL AFFAIRS AND MILITARY GOVERNMENT
LT. COL. KENNETH T. BARNABY, JR., OFFICE, ASSISTANT SECRETARY OF THE ARMY (FINANCIAL MANAGEMENT)

ADMINISTRATION

Program and financing

	1957 actual	1958 estimate	1959 estimate
Program by activities:			
1. Administration	$1,256,353	$1,405,000	$1,650,000
2. Construction of administration facilities			200,000
3. Exchange of persons	193,452	210,000	215,000
4. Aid to Ryukyuan economy	865,217	860,000	1,085,000
Total obligations	2,315,022	2,475,000	3,150,000
Financing:			
Unobligated balance no longer available	34,978		
Appropriation (new obligational authority)	2,350,000	2,475,000	3,150,000

Object classification

	1957 actual	1958 estimate	1959 estimate
ADMINISTRATION, RYUKYU ISLANDS			
Total number of permanent positions	374	398	406
Full-time equivalent of all other positions	1	1	2
Average number of all employees	346	359	391
Number of employees at end of year	340	366	398
Average GS grade and salary	8.8 $6,099	8.9 $6,320	8.9 $6,355
01 Personal services:			
Permanent positions	$917,547	$1,014,550	$1,134,138
Positions other than permanent	4,424	2,000	13,000
Other personal services	87,815	82,200	89,845
Total personal services	1,009,786	1,098,750	1,236,983
02 Travel	45,058	67,285	137,137
03 Transportation of things	35,257	17,680	13,949
04 Communication services	44,836	45,250	44,675
05 Rents and utility services	5,613	6,100	21,050
06 Printing and reproduction	12,939	23,600	31,300
07 Other contractual services	292,531	291,104	293,087
08 Supplies and materials	38,718	54,459	55,225
09 Equipment	27,083	13,300	43,550
10 Land and structures			182,000
11 Grants, subsidies, and contributions	750,000	820,346	1,053,912
15 Taxes and assessments	729	1,126	1,132
Total, administration, Ryukyu Islands	2,262,550	2,439,000	3,114,000
ALLOCATION ACCOUNTS			
02 Travel	3,311		
03 Transportation of things	2,000	2,000	2,000
05 Rents and utility services	614		
07 Other contractual services	38,972	27,000	27,000
08 Supplies and materials	5,066	5,000	5,000
09 Equipment	2,509	2,000	2,000
Total, allocation accounts	52,472	36,000	36,000
Total obligations	2,315,022	2,475,000	3,150,000
Obligations are distributed as follows:			
Administration, Ryukyu Islands	2,262,550	2,439,000	3,114,000
United States Information Agency	36,513	36,000	36,000
Department of Health, Education, and Welfare	15,959		

CONSTRUCTION OF UTILITY SYSTEMS, RYUKYU ISLANDS

Program and financing

	1957 actual	1958 estimate	1959 estimate
Program by activities:			
1. Transmission line and substations		$1,513,000	
2. Conventional powerplant			$3,359,000
3. Construction, installation, and equipment of water system			641,000
Total obligations		1,513,000	4,000,000
Financing: Unobligated balance carried forward			2,000,000
Appropriation (new obligational authority)		1,513,000	6,000,000

Object classification

	1957 actual	1958 estimate	1959 estimate
10 Lands and structures		$1,513,000	$4,000,000

Mr. PASSMAN. The committee will come to order. We have before us Maj. Gen. C. K. Gailey, Chief of Civil Affairs and Military Government, Department of the Army, to testify for funds to operate the United States Civil Administration program in the Ryukyu Islands.

JUSTIFICATION MATERIAL

We shall insert the justification material at this point:
(The material follows:)

ADMINISTRATION, RYUKU ISLANDS

"For expenses, not otherwise provided for, necessary to meet the responsibilities and obligations of the United States in connection with the government of the Ryukyu Islands, including, subject to such authorizations and limitations as may be prescribed by the Secretary of the Army, tuition, travel expenses, and fees incident to instruction in the United States or elsewhere of such persons as may be required to carry out the provisions of this appropriation; travel expenses and transportation; services as authorized by section 15 of the Act of August 2, 1946 (5 U. S. C. 55a), at rates not in excess of $50 per diem for individuals not to exceed
(1) ten in number; *not to exceed $3,000 for contingencies for the High Commissioner, to be expended in his discretion;* translation rights, photographic work, educational exhibits, and dissemination of information, including preview and review expenses incident thereto, hire of passanger motor vehicles and aircraft; purchase of four passenger motor vehicles for
(2) replacement only; *construction*, repair and maintenance of buildings, utilities, facilities, and appurtenances; and such supplies, commodities, and equipment as may be essential to carry out the purposes of this ap-
(3) propriation: [$2,475,000] *$3,150,000*, of which not to exceed [$1,405,000]
(4) *$1,650,000* shall be available for administrative and information [and education] expenses: *Provided*, That the general provisions of the Appropriation Act for the current fiscal year for the military functions of the Department of the Army shall apply to expenditures made from this appropriation: *Provided further*, That expenditures from this appropriation may be made outside continental United States when necessary to carry out its purposes, without regard to sections 355, [1136], 3648, and 3734,
(5) Revised Statutes, as amended, *section 4774 (d) of title 10, United States Code*, civil service or classification laws, or provisions of law prohibiting payment of any person not a citizen of the United States: *Provided further*, That expenditures may be made hereunder for the purposes of economic rehabilitation in the Ryukyu Islands in such manner as to be consistent with the general objectives of titles II and III of the Mutual Security Act of 1954, and in the manner authorized by sections 505 (a) and 522 (e) thereof: *Provided further*, That funds appropriated hereunder may be used, insofar as practicable and under such rules and regulations as may be prescribed by the Secretary of the Army to pay ocean transportation charges from United States ports, including Territorial ports in the Ryukyus for the movement of supplies donated to or purchased by, United States voluntary nonprofit relief agencies registered with and recommended by the Advisory Committee on Voluntary Foreign Aid or of relief packages consigned to individuals residing in such areas: *Provided further*, That under the rules and regulations to be prescribed, the Secretary of the Army shall fix and pay a uniform rate per pound for the ocean transportation of all relief packages of food or other general classification of commodities shipped to the Ryukyus regardless of methods of shipment and higher rates charged by particular agencies of transportation, but this proviso shall not apply to shipments made by individuals to individuals: *Provided further*, That the President may transfer to any other department or agency any function or functions provided for under this appropriation, and there shall be transferred to any such department or agency without reimbursement and without regard to the appropriation from which procured, such property as the Director of the Bureau of the Budget shall determine to relate primarily to any function or functions so transferred (Supplemental Appropriation Act, 1958)."

Appropriated 1958	$2,475,000
Estimate 1959	3,150,000

Reasons for changes:

(1) To provide for the requirement which derives from High Commissioner's obligations as the senior United States civil as well as military authority in the Ryukyu Islands.

(2) To provide for construction United States civil administration facilities.

(3) Changes in amounts.

(4) Since aid for education is provided for under technical cooperation and exchange of persons programs, it is inappropriate to include this activity within administrative limitation.

(5) Occasioned by codification of Revised Statutes, section 1136, as section 4774 (d) of title 10 United States Code (which required detailed estimates of construction and authority from Congress) and repeal of Revised Statutes, section 1136.

Statement relating appropriation estimate to current appropriation

1957 appropriation (including supplementals)		$2,350,000
1958 budget estimates (including amendments and supplementals submitted to Congress)		3,875,000
1958 appropriation in annual act		2,475,000
Total appropriation for fiscal year 1958		2,475,000
Deductions:		
1. Administration: A decrease in costs of information materials and supplies due to increased use of information material available to USIS		9,000
2. Aid to Ryukyuan economy:		
(a) Reduction of transportation requirements of relief supplies shipped by United States welfare organizations to the Ryukyu Islands	$5,000	
Subtotal aid to Ryukyuan economy		5,000
Total deductions		14,000
Additions:		
1. Administration:		
(a) Increase in personal services to provide for adequate staffing of judicial system, establishing a unit for planning and programing to develop long range plans, and improving labor relations activities		142,000
(b) Cost of travel to provide for reimbursement of Military Air Transport Service (MATS), and increased ocean transportation costs		60,000
(c) Increase in administrative costs necessary to support increased activities and to provide for renovation and repair of the main United States Civil Administration (USCAR) office building		52,000
Subtotal, administration		254,000
2. Construction of USCAR facilities: Requirement for funds to finance construction of USCAR court building; and necessary equipment and fixtures for the court building		200,000
3. Exchange of persons: Requirement for funds to finance increased travel and contractual costs of national leaders' and Ryukyuan students' exchange program		5,000
4. Aid to Ryukyuan economy: Increase in requirements for economic assistance to the Ryukyu Islands for tuberculosis control, police facilities and equipment		230,000
Total additions		689,000
Total estimate for fiscal year 1959		3,150,000

Analysis by activities

Activities	Fiscal year 1958	Deductions	Additions	Fiscal year 1959
1. Administration:				
(*a*) Information materials and services	$109,000	$9,000	----------	$100,000
(*b*) Pay of civilian employees	1,153,000	----------	$142,000	1,295,000
(*c*) Travel of personnel	45,000	----------	60,000	105,000
(*d*) Incidental operating expenses	98,000	----------	52,000	150,000
Subtotal, administration	1,405,000	9,000	254,000	1,650,000
2. Construction of USCAR facilities	----------	----------	200,000	200,000
Subtotal, construction of USCAR facilities	----------	----------	200,000	200,000
3. Exchange of persons	210,000	----------	5,000	215,000
Subtotal, exchange of persons	210,000	----------	5,000	215,000
4. Aid to Ryukyuan economy:				
(*a*) Transportation of commodities	10,000	5,000	----------	5,000
(*b*) Support of government services and projects	770,000	----------	230,000	1,000,000
(*c*) Technical cooperation	80,000	----------	----------	80,000
Subtotal, aid to Ryukyuan economy	860,000	5,000	230,000	1,085,000
Total appropriation or estimate	2,475,000	14,000	689,000	3,150,000

Comparative summary of obligations by projects and fiscal year

Project No.	Purpose of projects	Actual obligations, fiscal year 1957	Estimated obligations, fiscal year 1958	Estimate, fiscal year 1959
160	Information materials and services	$112,123	$109,000	$100,000
170	Construction of USCAR facilities	----------	----------	200,000
410	Pay of civilian employees	1,012,939	1,153,000	1,295,000
415	Travel of personnel	28,300	45,000	105,000
420	Transportation of commodities	35,257	10,000	5,000
430	Incidental operating expenses	102,991	98,000	150,000
440	Support of government services and projects	750,000	770,000	1,000,000
450	Exchange of persons	193,452	210,000	215,000
460	Technical cooperation	79,960	80,000	80,000
	Total	[1] 2,315,022	2,475,000	3,150,000
	Unobligated balance	[2] 34,978	----------	----------
	Total appropriation or estimates	2,350,000	2,475,000	3,150,000

[1] Obligations shown are as of June 30, 1957.

[2] Amount representing unobligated balance fiscal year 1957 is comprised of the following breakdown: Project 410 (pay of civilian employees) $10,237 due to lag in recruitment; project 415 (travel of personnel) $10,650 due to nonbilling by MSTS for ocean transportation expenses; project 420 (transportation of commodities) $4,743 due to a lesser volume of welfare packages donated than was anticipated; other projects: 450 (exchange of persons) $6,548; 460 (technical cooperation) $40; 160 (information materials and services) $1,701; 430 (incidental operating expenses) $1,059 due to savings on procurement costs and contracts.

Comparative summary obligations by objects fiscal years 1957, 1958, and 1959

By object of expenditure	Actual, fiscal year 1957	Estimate, fiscal year 1958	Estimate, fiscal year 1959	Fiscal year 1959 over fiscal year 1958 increase (+) or decrease (−)
01 Personal services	$1,009,786	$1,098,750	$1,236,983	+$138,233
02 Travel	48,369	67,285	137,137	+69,852
03 Transportation of things	37,257	19,680	15,949	−3,731
04 Communications	44,836	45,250	51,475	+6,225
05 Rents and utilities	6,227	6,100	9,150	+3,050
06 Printing and binding	12,939	23,600	31,300	+7,700
07 Contractual services	331,503	318,104	322,737	+4,633
08 Supplies and materials	43,784	59,459	62,025	+2,566
09 Equipment	29,592	15,300	46,200	+30,900
10 Land and structures			182,000	+182,000
11 Grants, subsidies and contributions	750,000	820,346	1,053.912	+233,566
15 Taxes and assessments	729	1,126	1,132	+6
Total obligations	2,315,022	2,475,000	3,150,000	+675,000

Construction of Utility Systems, Ryukyu Islands

PROJECT 260—CONSTRUCTION OF POWER SYSTEMS, RYUKYU ISLANDS

Location: The proposed plant is planned for location in central Okinawa near Kin Beach. It has a protected inlet for ships, free of heavy seas, and provides sea water for cooling the turbine condensers. There are no airbases in proximity and its location permits utilization of nonarable land.

Summary financial data

Estimated Federal cost	$5,359,000
Estimated non-Federal cost	2,328,000
Total estimated project cost	7,687,000
Appropriation requested for fiscal year 1959	5,359,000

B. Justification

It is necessary to increase the firm permanent land generating capacity of the power system in Okinawa by 44,000 kilowatts by July 1, 1961. In addition to the basic power generation, modification to existing electrical system, mooring facilities, and adequate fuel storage are required. It is planned to construct a POL-fueled steam plant with a generator of 22,000 kilowatt capacity and space for installation of a second 22,000 kilowatt unit. It is expected that Ryukyu Electric Power Corp. will finance $2,328,000 of the cost during fiscal years 1959, 1960, and 1961. Funding for the additional 22,000 kilowatt unit will be required later. The $1,513,000 appropriated in fiscal year 1958 provided for the construction of a power transmission system from Kadena to the vicinity of the Marine Camp Schwab, near Henoko. Necessary lines, transformers, and substations were provided over a distance of 25.5 miles.

At the present time, the only permanent land generating facility in the Ryukyus is the Machinato steam powerplant located near Naha. This plant has a firm capacity at 10 percent overload of 38,000 kilowatts. (Firm capacity is determined by adding together the maximum capability of all units except the single largest which is held in reserve). Current total United States Forces and Ryukyuan demand exceeds the firm capacity of this plant by 21,027 kilowatts. Within the time required to construct an additional powerplant, the demand is estimated to be 89,000 kilowatts and will thus be over twice the firm capacity of the Machinato plant.

Project 260—Construction of power systems, Ryukyu Islands

Total for subproject:	
Presently available, fiscal year 1958	$1,513,000
Estimate, fiscal year 1959	5,359,000

A. Requirements

Conventional powerplant:	
(1) Mooring facilities	$1,000,000
(2) POL storage, 3 80,000-barrel tanks, pumping station, and pipeline	792,000
(3) Communication facilities, plant to plant	200,000
(4) Utilities: Water, roads, sewer, electrical, water storage tanks, fencing	200,000
(5) Plant consisting of 1 22,000-kilowatt generator with structure to accommodate second 22,000-kilowatt unit together with increasing substation capacities	5,495,000
Total conventional powerplant	7,687,000

There is, at present, available to supplement the Machinato steam powerplant about 15,000 kilowatts of generating capacity from various diesel powered generators scattered among 7 different locations and 50,000 kilowatts from 2 floating power barges. Neither the diesel power generating units nor the floating power barges are included in determining the firm permanent land generating capacity of the system for the reasons that: (1) the diesel powered generating units are military property subject to removal or relocation if military expediency requires; they are expensive to operate and are considered only as standby units necessary for military security in case of an emergency; and (2) the floating power barges are both mobile-type units which also are military property and might have to be withdrawn to another area should an emergency or other operational necessity arise. Both of these barges served extra duty in Korea. They are intended as an interim power source only until permanent land generating plants can be constructed. Furthermore, one of the floating units is completely undependable due to age and condition. Even when it is operating, its efficiency is very low.

Addition of the plan herein requested will increase the firm permanent land generating capacity to 50,600 kilowatts. The permanent system will then be comprised of the Machinato plant which, at permissible 10 percent overload, will provide 50,600 kilowatts and the new plant which will generate 22,000 kilowatts. As the largest single unit in the permanent system, the new plant must be considered reserve ot arrive at the firm capacity of the permanent system. As indicated, the anticipated peak demand on the system, by the time the facilities installed under this project become operational (fiscal year 1962), is 89,000 kilowatts. This will require the retention of overage, inefficient, temporary generating facilities pending funding and installation of additional permanent generating plant by the Ryukyu Electric Power Co. This construction, while providing electric power for both United States purposes and for the Ryukyuan populace, will also provide a continual source of revenue to the Ryukyuan economy as does the present steamplant and transmission system constructed under appropriations for government and relief in occupied areas (GARIOA) in fiscal years 1951 and 1952.

The present system reaches only 56 percent of Okinawas 700,000 population: however, the planned expansion of 22,000 kilowatts will increase this to 75 percent of the estimated 750,000 population by July 1961. The further projected unit supplying another 22,000 kilowatts will allow an estimated 80 percent of Okinawa's population to be served.

Project 270—Construction of water system, Ryukyu Islands

Total for subproject:	
Estimated fiscal year 1958	0
Estimated fiscal year 1959	$641,000

A. Requirements

(1) Dam and pumping station	$75,000
(2) Two 1,500 gallons per minute, 350 feet head pumps	18,000
(3) One 750 gallons per minute, 350 feet head pump	5,000
(4) Transformers and power lines	60,000
(5) 15,000 feet 14-inch cast iron pipe (raw water line)	173,000
(6) 31,000 feet 12-inch cast iron pipe (raw water line)	310,000
Total for water system	641,000

Location: Near the mouth of Hizagawa River, which empties into the East China Sea, a dam will be constructed with a pumping station for this raw water supply estimated at 2 million gallons per day. Waterlines will carry raw water from this station south along the shoreline 8.7 miles to the Naha purification plant.

Summarized financial data

Estimated Federal cost	$641,000
Estimated non-Federal cost	0
Total estimated program cost	641,000
Appropriation requested for fiscal year 1959	641,000

B. Justification

The funds requested for this project are required in fiscal year 1959 to provide a much-needed addition to the water system of the densely populated areas of the central part of the island of Okinawa. Nearly all business and trade facilities, as well as numerous United States forces' installations and personnel, are also located in this area.

The military water system is the principal source of water for this section of the island, with a total production capacity of 16.0 million gallons per day. During the past year United States forces requirements have averaged 15.0 million gallons per day and at times reach near capacity. The only nonmilitary system in this entire region is located at Naha City, a metropolitan area with a civilian population of 160,000. The treatment plant of this municipal system has a maximum capacity of 3.5 million gallons per day. However, the yield from the springs which constitute its raw water source varies from a maximum of 2.0 million gallons per day during the rainy season, to 700,000 gallons per day in dry weather. During the summer of 1957 this source of water was extremely low due to unusually dry weather, while the consumption of water in Naha City averages 2.7 million gallons per day. The military was called upon to meet the emergency by curtailing its own requirements and trucking water to the civilian centers in this and other sections of Okinawa. This project to be operated by the United States Civil Administration will provide a firm source of raw water to utilize the maximum capacity of the Naha treatment plant. This resource will also provide revenue for the use of USCAR in developing the Ryukyuan economy.

General Gailey, do you have a statement that you would like to make?

General Gailey. Yes, sir; at your pleasure, Mr. Chairman.

Mr. Passman. We would be very happy to hear from you, General.

General Statement

General Gailey. Mr. Chairman and gentlemen, I am grateful for this opportunity of presenting for your consideration the budget requirements for the United States Civil Administration of the Ryukyu Islands.

The use of funds appropriated by the Congress for the Ryukyu Islands since fiscal year 1947 has resulted in continuing salutary improvement in economic conditions in these islands, which, as is well known to you, constitute an essential part of our worldwide defenses. The application to which prior year funds have been put is listed in an

attached table for your ready reference. It will be noted from this table that United States aid has fallen off sharply since 1953, which was the last year in which major shipments of food were provided from appropriated funds. During the period 1947 through 1949 most of the supplies furnished were distributed to the population on a relief basis. Beginning in 1950, however, commodity imports were sold for local currency (B yen) which was used to help maintain essential government functions, to finance necessary public works projects, and to establish a loan fund to assist private business. In fiscal year 1955 commodity aid was terminated and since that time appropriated funds have been utilized directly for support of the economy. This is accomplished by grants to the local government (the government of the Ryukyu Islands), which expends them under the supervision of the United States Civil Administration.

Notwithstanding the degree of recovery thus far achieved, the economy is still far from self-sufficient. It is proposed that we continue grants to the local government which, in effect, primarily constitute reimbursement for the added costs of public health and safety services required because of the presence of the large number of United States Forces personnel in the islands. Full account has been taken of the financial capabilities and resources of the Government of the Ryukyu Islands in computing the fiscal year 1959 requirements.

If the committee will refer to pages 7 and 8 of the justification labeled "Administration, Ryukyu Islands" it will observe that the request is divided into four major activities similar to the form of presentation in the past. The total request of $3,150,000 is an increase of $675,000 over the amount approved by the Congress for fiscal year 1958. The current request is related to the amount approved for fiscal year 1958 as follows:

1. Administration. The increase of $142,000 in the "Pay of civilian employees" includes $54,000 to provide for an additional 8 graded positions; $9,000 for increased pay of local employees; and $79,000 primarily to provide: First, for a higher job-occupancy rate which resulted from filling job vacancies through recruitment of personnel available from the phasing out of the Far East Command; and second, the increased need for special consultants on a temporary employment basis. The additional personnel requirements are for: (*a*) expanding the staff of the recently established judicial system; (*b*) establishing a unit for planning and programing to develop long-range plans; and (*c*) improving labor-relations activities.

An increase in the requirements for travel costs of $60,000 is principally due to the recently established Department of Defense policy of requiring reimbursement to the Military Air Transport Service (MATS) for transporting personnel connected with the programs carried out under this appropriation. This amount also provides for increased rates in Military Sea Transportation Service.

Incidental operating expenses are $52,000 more than the current fiscal year. Besides the increases in recurring items provided under this project in prior fiscal years, included in this amount is $27,000 needed for renovation of the United States civil administration office building, and $3,000 requested as a representation allowance for the High Commissioner to defray minimum essential expenses.

2. Construction of USCAR facilities. During fiscal year 1958, the judicial system, initiated on an austere basis, is utilizing a substand-

ard, prewar structure belonging to the Japanese Government (now being held by the USCAR property custodian). Since there is no suitable building in Naha to house the United States civil administration courts, an amount of $200,000 is requested for constructing and furnishing an appropriate building.

3. The exchange of persons program totaling $215,000 compares with $210,000 provided in fiscal year 1958. Even with the $5,000 increase in the project the substantial rise in administrative and transportation costs per person which have occurred in the past year will necessitate a decrease of 8 in the number of students attending courses at United States universities in fiscal year 1959.

4. Aid to the Ryukyuan economy.

(*a*) Transportation of commodities. The reduction of $5,000 in this project is made possible by a decrease in the requirements for funds to finance ocean-transportation costs of donated relief commodities. Transportation costs of surplus agricultural commodities made available under the provisions of title 3 of Public Law 480 are financed from funds also provided under Public Law 480.

(*b*) Support of Government services and projects.

An amount of $1 million is proposed for the support of Government services and projects. $500,000 represents the contribution which the United States has provided in each of the past few years to the government of the Ryuku Island (GRI) as a reimbursement for services performed in the fields of public safety and immigration and public health and sanitation. The other $500,000 which is requested this year, is for the support of GRI projects in these same general fields. $170,000 is a contribution toward the provision of additional police facilities and equipment needed to bring the police force up to the efficiency levels which meet United States requirements for maintaining security in areas for which the Ryukyuan police are responsible. An amount of $330,000 is to assist the central government in the effective control of tuberculosis, which is essential for the patient's welfare and the protection of the United States forces and the Ryukyuan community.

In addition to the usual requirements for administrative funds and aid to the Ryukyuan economy, a request for funds in the amount of $6.0 million for "Construction of utility systems, Ryukyu Islands" also has been submitted for your consideration. This request includes $5,359,000 to assist in providing for a needed increase in the electrical generating capacity of the island power system. The amount required is in addition to the $1,513,000 approved for fiscal year 1958 for construction of a transmission line. An amount of $641,000 is requested in fiscal year 1959 to provide a much needed addition to the water system of the densely populated areas of the central part of the island of Okinawa.

I appreciate the opportunity to present this introductory statement. At your disposal for further information you may desire on the basic budget problems are representatives of the United States civil administration of the Ryukyu Islands and of the Office of Civil Affairs and Military Government.

Mr. PASSMAN. Thank you very kindly, General.

We shall insert the attached sheet at this point in the record.
(The sheet referred to follows:)

Administration, Ryukyu Islands (previously GARIOA through fiscal year 1957)

[In millions of dollars]

Fiscal year	Economic aid	Administration and reorientation	Total	Fiscal year	Economic aid	Administration and reorientation	Total
1947	9.152	2.548	11.700	1953	8.809	2.075	10.884
1948	13.651	3.450	17.101	1954	1.524	1.321	2.845
1949	24.052	3.701	27.753	1955	1.636	1.380	3.016
1950	49.054	3.755	52.809	1956	1.664	1.267	2.931
1951	36.215	3.516	39.731	1957 [1]	.870	1.480	2.350
1952	12.853	2.269	15.122	1958 [2]	.860	1.615	2.475

[1] Obligated.
[2] Appropriated.

Mr. PASSMAN. I should like to state that I do not want to place myself in the position of being a lecturer, especially speaking to a two-star general, surrounded by several expert staff members, but we are all taxpayers.

Almost every agency that comes before this committee is asking for more money than they asked for the previous year, and many times projects that the Congress had declined in prior years are renewed.

We are confronted with this situation, General: we are continuing in this day of great prosperity to spend more than we take in. We have gone so far afield on so many different programs and new programs it is now anticipated that we could very easily have a budget deficit of from $10 to $12 billion this year.

So, you do understand it causes members of the Appropriations Committee great concern as to whether we should grant these increases, and continue deficit financing, or whether we should inaugurate some place a procedure to keep expenditures within the income of the Government.

Men with greater capacity and more responsibilities than myself will have to make that decision, but it is one that must be made.

In the event the committee in its wisdom—and certainly I am only one member of the committee—should decide that you should have the same appropriation you had last year, with the exception of an amount sufficient to take care of the increases in salaries made mandatory by laws enacted since you appeared before us, do you think you would be able to operate for another year and postpone to some future date some of these planned projects that you have in mind, about which we did not know last year?

General GAILEY. Mr. Chairman, if we got the same amount that we received last year, it would retard in my opinion and in the opinion of my advisers the entire program.

Mr. PASSMAN. Speaking as an administrator, now, if we grant the increases and the money to take care of the salary increases made mandatory by acts of Congress, then do you think that you could take that and operate for another year?

General GAILEY. There is a great need out there, Mr. Chairman, for the increase in personnel that we have asked for as outlined in my

statement here, and the people that we need to bolster up our labor department out there, and the people that we need for our future plans.

Frankly, sir, there has been a great need there for several years, and there is a continuing need for it, and if we do not get it, it just retards our program so far as that is concerned.

Mr. PASSMAN. I think that is true of all departments, but it is a question of whether we are going to live within our income or continue deficit financing to carry on a lot of programs that could be postponed.

Certainly, the $200,000 request for a building is something new, is it not, because you did not have that in your request last year?

COURT BUILDING

General GAILEY. No, sir; we did not have it last year.

Mr. PASSMAN. If we have successfully postponed that to this date, do you think it would hurt the program to postpone it another year?

General GAILEY. I think it is very advisable to start building a court building out there. The present building we have, sir, is hardly adequate to carry on our court proceedings.

Mr. PASSMAN. I have been in the building and I thought it was very nice, to be frank with you. Others might disagree, but I thought the building was adequate.

General GAILEY. We considered this thing very carefully, sir, and we consider that it is very essential that we have a representative building for our court out there representing the United States.

Mr. PASSMAN. How have they been getting along in the past? They have been getting along with the present facilities; have they not?

General GAILEY. Yes, sir.

Mr. PASSMAN. Have you had an increase in population?

General GAILEY. A normal increase.

Mr. PASSMAN. Would there be justification for this Congress, without any advanced notice or study, to just up and give you money to build a $200,000 building?

General GAILEY. Yes, sir; I think it would.

FUNDS FOR POWER SYSTEM DENIED IN 1958

Mr. PASSMAN. May I ask you this question: With reference to the construction of the utility system, is this not the same item we discussed last year, and decided it was not wise to enter into this large project at the time?

General GAILEY. I did not understand that it was not wise to do it.

Mr. PASSMAN. Is this not the same item that you presented to the committee last year and the committee declined funds for it?

General GAILEY. Yes, sir.

Mr. PASSMAN. But, since that time you have had some increase in the electric facilities out there?

General GAILEY. Yes, sir, in transmission facilities; but we have to start building the source of the electricity.

Mr. PASSMAN. How about the water system? Is that the same item also?

General GAILEY. The water system is a new item this year, sir. If you will give us an opportunity, I would like to go into it.

Mr. PASSMAN. Certainly you will have that opportunity; but it is a new item, is it not?

General GAILEY. Yes, sir.

Mr. PASSMAN. But, so far as the power project is concerned, you have increased the kilowatt output since you were before the committee last year with the money that we allowed you at that time?

General GAILEY. That was for electric transmission lines.

Mr. PASSMAN. That certainly improved the system; did it not?

General GAILEY. To that extent, but we still need the source of the electric power.

Mr. PASSMAN. But, you are asking Congress to appropriate funds in the amount of $6 million, and this is the same project that the Congress declined to appropriate funds for last year?

General GAILEY. That is essentially correct; yes, sir.

Mr. PASSMAN. Is that correct or not correct?

General GAILEY. Yes, sir; it is the same project.

There has been no change in it.

REPRESENTATION ALLOWANCE

Mr. PASSMAN. Now, with reference to the proposed changes in the appropriation language, how much representation allowance is available to the High Commissioner in his other roles from sources other than this appropriation?

General GAILEY. Around $1,000.

Mr. PASSMAN. Could we be a little bit more specific on that? Is there any way to know? My question was, "How much representation allowance is available to the High Commissioner in his other roles from sources other than this appropriation?"

Mr. O'FLAHERTY. Mr. Chairman, may I address myself to that question?

Mr. PASSMAN. Yes, certainly.

Mr. O'FLAHERTY. The procedure which is followed by the Department of the Army is to allocate to the senior commander in an area a lump-sum amount for this purpose. He allocates, suballocates, or apportions it to subordinate commanders. In this past fiscal year—in the fiscal year just finished—the commanding general of the Ryukyuan Command, Ninth Corps, had $1,000 as his allowance.

Mr. PASSMAN. You will add to that the amount in this appropriation?

Mr. O'FLAHERTY. Yes, sir.

Mr. PASSMAN. How much is requested in this appropriation for representation allowance?

Mr. O'FLAHERTY. $3,000.

Mr. PASSMAN. Making a total of $4,000?

Mr. O'FLAHERTY. Yes, sir; that is correct.

Mr. PASSMAN. Will you state for the record, briefly, what "representation allowance" means, and just what it is spent for?

Mr. O'FLAHERTY. The representation allowance requested for the High Commissioner would be used by him in his capacity as the senior United States political as well as military representative in the area. This is, as you know, a sort of a crossroads of the world, and many

visiting dignitaries visit there ranging from chiefs of state through the whole gamut of visitors, and as the senior United States representative, it is incumbent upon the High Commissioner on occasion to accord proper receptions to these people.

These funds are requested for that purpose, to defray this cost.

Mr. PASSMAN. That is a very fine statement. Now, for what is it spent? What type of representation is involved here? There has been a great deal of misunderstanding about what "representation allowance" means.

Does it include ball games, or things like that? Indicate for the record for what the money is spent.

General GAILEY. Mr. Chairman, we have Mr. Gillies present with us, who has a list of the visitors who came there that had to be entertained.

Mr. PASSMAN. Yes; and they come to Washington, especially at this time of the year. They are flying in almost every week. What we want to know is not the number of dignitaries, but for what the allowance is spent, regardless of how many there are.

Mr. GILLIES. We have here an accounting of what happened.

Mr. PASSMAN. All right; for what is the money spent?

Mr. GILLIES. The money, Mr. Chairman, is spent for the housing and feeding of these visiting dignitaries and their staffs that accompany them. For example, the Prime Minister and Prince of Cambodia visited Okinawa for a 2-day period on the way to Japan where that group was to be entertained by the Japanese Government, and at state expense. This was the first stop on the trip where you might say they were under the American flag, and it was felt that the prestige of the United States required that we at least afford them somewhat similar treatment to that which they would receive in Japan.

Mr. PASSMAN. With reference to housing and food, I certainly agree with you that we should feed them well and give them good beds. That is what it is spent for?

Mr. GILLIES. Essentially.

Mr. PASSMAN. You are stating at least indirectly that there is no money in here for whisky and alcoholic beverages. Do I draw that implication from your answer?

Mr. GILLIES. There may be beverages served with the meals, but certainly it is not a major part of the expenditure.

Mr. PASSMAN. Beverages?

Mr. GILLIES. Yes, sir.

Mr. PASSMAN. Could they be nonalcoholic beverages?

Mr. GILLIES. Nonalcoholic beverages, certainly, are served.

Mr. PASSMAN. How about alcoholic beverages which are paid for out of this fund? Are they served?

Mr. GILLIES. They may be if the nature of the occasion requires that they be served.

Mr. PASSMAN. Do you have occasions which require it?

Mr. GILLIES. As I recall, on this particular occasion, wine was served.

Mr. PASSMAN. I do not have reference to just this particular time, but let us see out of the total what it would amount to. Could you tell me about what was spent in the way of percentage of the total for what we refer to as alcoholic beverages?

Mr. GILLIES. It would be a very minor percentage. I am unable to give you the precise percent.

Mr. PASSMAN. But there is some such request as this every year. You do not know of any years where we did not spend it for that type of representation?

Mr. GILLIES. We have not had this representation allowance in the past.

Mr. PASSMAN. This is something new?

General GAILEY. We have not had it in this appropriation.

Mr. GILLIES. This is a new one. This has been handled through the contributions of various individuals who are in official capacities.

Mr. PASSMAN. The gentleman is being extremely fair. You do know that Members of Congress have a lot of responsibility and at times we have callers coming in to see us at the rate of 20 or 30 a day. Of course, you know we have no representation allowance, and inasmuch as you have gotten by without a representation allowance in the past, and without any great embarrassment, would you like for the committee to assist you in maintaining the status quo? It would certain be a credit to the High Commissioner to indicate that this is one place where we have not had a whisky allowance in the past, and we think we can get along without it in the future.

General GAILEY. Mr. Chairman, I think the High Commissioner deserves to have it. I visited out there and this was not particularly done for me, but they have any number of guests, and they have very frequently had to spend money out of their own pockets in order to take care of it, but I do not think we ought to ask them to continue to do it.

Mr. PASSMAN. Do you think Members of Congress should spend money out of their own pockets for a representation allowance for their visitors, or have an expense account?

General GAILEY. Sir, I think you could answer that question better than I could.

Mr. PASSMAN. If we are going to give it to everybody else all over the world, I am wondering if possibly some of our friends would not recommend some type of representation allowance for Congressmen.

General GAILEY. I certainly think the High Commissioner ought to have it.

Mr. PASSMAN. But you have not had it in the past.

General GAILEY. This is the first time it has been in this appropriation.

Mr. PASSMAN. Have you had a representation allowance out of some other money appropriated by the Congress?

Mr. O'FLAHERTY. No, sir.

Mr. PASSMAN. In other words, this is an entirely new item, and this is the first year you have asked for it?

Mr. O'FLAHERTY. Yes, sir.

Mr. PASSMAN. How come you have waited this long to ask for it?

Mr. GILLIES. Mr. Chairman, may I address myself to the question?

Mr. PASSMAN. Surely.

Mr. GILLIES. The High Commissioner position was established in July of 1957. Prior to that time the chief civil affairs officer in the Far East was the commander in chief, Far East, the Governor of the Ryukyus, who was in Tokyo. Since July 1957 the High Commis-

sioner has become the chief United States representative in the Ryukyu Islands and that was subsequent to the last time that General Gailey was before this committee.

TRAVEL

Mr. PASSMAN. Your request for travel funds is more than double the amount for 1958, and nearly 4 times the 1957 amount. What accounts for this rapid increase?

Mr. NOWELL. Mr. Chairman, these travel funds have been increased primarily to cover the funds that will be needed to reimburse the Military Transport Service. We call it MATS; it is the Military Air Transport Service.

We have included this estimate in here in accordance with Defense policy to provide funds with which to cover this transportation.

Mr. MILLER. Mr. Chairman, may I ask a question at this point?

Mr. PASSMAN. Surely.

Mr. MILLER. This policy has been put into effect throughout all the armed services in the last year or two, that each military service would reimburse the transport service for such travel. Under the prior method of operation you got the transportation and it was not funded in this item.

Mr. NOWELL. Yes, sir.

Mr. MILLER. And this is in conformity with what has been done with the armed services generally?

Mr. NOWELL. Yes, sir.

Mr. PASSMAN. Off the record.

(Discussion off the record.)

Mr. GARY. Does that mean that occasionally the MATS will pick up a serviceman who has vacation time or leave time and carry him to some other location where he can spend his leave, and that they would be reimbursed for that service?

Mr. NOWELL. That I cannot answer, sir. I do not presume to answer for the military, other than the fact that this travel is being put on a cost basis and, in such a case, they are charging in this appropriation for the passengers or personnel that travel by MATS. It may be true that the same holds good with the military when you speak of the servicemen.

Mr. GILLIES. There are, however, no special travel funds in this request. This is all official travel, and involves costs for official travel, only so far as this appropriation is concerned.

Mr. MILLER. Off the record.

(Discussion off the record.)

Mr. GARY. Off the record.

(Discussion off the record.)

Mr. PASSMAN. Why would the civilian government of the Ryukyus have to pay to transport military personnel? Let us just pin that down.

Does the civilian government of the Ryukyus pay for transporting military equipment?

General GAILEY. No, sir; this is civilian.

Mr. PASSMAN. This is only civilian?

General GAILEY. Yes, sir.

Mr. PASSMAN. Now, we are getting somewhere with it. Inasmuch as the request is double that of 1958, and nearly four times that of 1957, would it indicate that there is more travel by civilians to and from this area who are connected with the Ryukyu Government?

General GAILEY. This paying of MATS takes a big chunk out of that.

Mr. PASSMAN. Would you be able to state for the record how much you paid MATS last year?

Mr. NOWELL. Mr. Chairman, last year we did not pay MATS anything. We were not on a reimbursement basis. That is effective July 1, 1958.

Mr. PASSMAN. What percentage of your travel in prior years was on MATS, would you say? Would it be 10 percent or 20 percent?

Mr. NOWELL. I would have to get that percentage for you, Mr. Chairman.

Mr. PASSMAN. Would you like to give us an educated guess?

Mr. NOWELL. That would have to be a guesstimate. I would say about 40 percent of our travel across the ocean was via MATS.

Mr. PASSMAN. Would you be able to furnish for the record the actual amount, because, certainly, you would not want us to appropriate money doubling your travel allowance without having more complete justification than this.

Mr. NOWELL. No, sir; I would like to clarify that to this extent: About $58,000 is for MATS. However, there are other increases in here. Last year we requested from this committee funds with which to reimburse the Military Sea Transport Service. We asked for it at a rate of $217 one way, or $434 for a round trip. In February of 1958 the Military Sea Transport Service issued their tariffs retroactive to July 1, 1957, and those rates were increased.

The present rate is $325 one way or $650 for a round trip.

Mr. PASSMAN. That certainly is a substantial increase.

Mr. NOWELL. We have that increase provided for in here, as well as the MATS.

Mr. PASSMAN. Would you be able to break down for us the total request as to what is going to MATS and how you arrived at that figure, and whether or not there has been any increase in travel?

Mr. NOWELL. We will do our best, sir.

(The information requested follows:)

Comparative summary of travel requirements for fiscal years 1957, 1958, and 1959—showing trips via Military Air Transport Service (MATS) for which reimbursement has not been required prior to 1959

	Fiscal year 1957		Fiscal year 1958		Fiscal year 1959	
	Trips	Cost	Trips	Cost	Trips	Cost
1. Temporary duty travel (round trips):						
(a) Within Ryukyu Islands:						
Commercial air transportation	30	0	28	246	128	1,080
Per diem		1,215		350		1,920
(b) Ryukyu Islands to Japan:						
Air transportation (MATS)	15	0	19	0	9	1,710
Commercial air transportation	3	570	4	891	0	0
Per diem		0		942		8
(c) Ryukyu Islands to Hawaii:						
Air transportation (MATS)	2	0	2	0	6	3,960
Per diem		0		0		1,080
(d) Travel to and from Washington, D. C.:						
Commercial air transportation	3	4,776	2	3,602	0	0
Air transportation (MATS)	3	0	10	0	8	12,800
Air transportation (Washington, D. C. to Travis Field)	3	900	3	852	0	0
Per diem		2,268		3,264		2,010
2. Permanent change of station (PCS) (1-way trips):						
(a) From Japan to Ryukyu Islands:						
Air transportation (MATS)	10	0	8	0	8	840
Ocean transportation (MSTS)	0	0	0	0	0	0
Per diem		0		0		48
(b) Between Ryukyu and Hawaii:						
Air transportation (MATS)	12	0	22	0	14	8,610
Ocean transportation (MSTS)	0	0	0	0	14	3,150
Per diem		0		396		252
(c) Between Ryukyu and United States:						
Ocean transportation (MSTS)	64	12,480	31	6,727	20	6,500
Commercial air transportation	0	0	0	0	0	0
Air transportation	6	0	29	0	18	13,140
Inland transportation		5,800		4,500		3,045
Per diem		6,438		6,051		2,388
3. Travel of dependents (1-way trips):						
(a) Japan to Ryukyu Islands:						
Air transportation (MATS)		0	5	0	9	945
Ocean transportation (MSTS)		0		0		0
(b) Between Ryukyu Islands and Hawaii:						
Air transportation (MATS)	8	0	5	0	6	3,690
Ocean transportation (MSTS)	0	0	0	0	14	3,045
(c) Between Ryukyus Island and United States:						
Ocean transportation (MSTS)	30	5,850	34	7,378	8	2,600
Air transportation (MATS)	5	0	23	0	25	18,250
Inland transportation		3,000		3,375		2,644
4. Movement of household goods		1,703		6,426		10,453
Total	194	[1] 45,000	225	[2] 45,000	287	[3] 105,000

SUMMARY

Total	194	45,000	225	45,000	287	105,000
MATS	61	0	123	0	103	63,945
Commercial air	39	6,246	37	5,591	128	[4] 1,080
MSTS	94	18,330	65	14,105	56	15,295
Per diem		9,921		11,003		8,538
Inland transportation		8,800		7,875		5,689
Shipment of household goods		1,703		6,426		10,453

[1] Reimbursement for Military Sea Transportation Service (MSTS) was not effected in fiscal year 1957, resulting in obligations of only $28,300 against the above program.

[2] Procedure for reimbursement of MSTS was effected in fiscal year 1958. Due to increased charges by forwarding agencies for shipment of household goods, the final obligations against the fiscal year 1958 program is expected to increase by approximately $10,000.

[3] This amount includes provision for 103 trips via MATS for which reimbursement has not been required n previous fiscal years as reflected in the above summary.

[4] Provision has been made in fiscal year 1959 for temporary duty travel within the islands of military personnel connected with United States civil administration activities. This travel was not funded for in fiscal year 1957 and 1958.

UNITED STATES CIVIL EMPLOYEES IN RYUKYUS

Mr. PASSMAN. Will you please enumerate all agencies of the United States Government having personnel and/or offices in the Ryukyu Islands? I do not want anything which is classified, but give us the information which you can on that.

Mr. O'FLAHERTY. Certain of the information must of necessity be classified.

Mr. PASSMAN. Give us as much information as you can, and whatever is classified will be deleted.

(The information referred to follows:)

United States civil employees in Ryukyu (status as of March 31, 1958)

Army	1,340
Navy	25
Air Force	401
Marines	42
Ryukyu post exchange	68
State Department (including USIA)	44
Total	1,920

CONSTRUCTION OF WATER SYSTEM

Mr. PASSMAN. The construction of a water system in the Ryukyu Islands was not contemplated at the time you appeared before this committee last year; is that right?

Is that something brandnew that has come up since last year?

Mr. O'FLAHERTY. That is new.

General GAILEY. It is new up here, but it has been discussed in the Department for a couple of years; but it is new this year.

Mr. PASSMAN. This is to go into sparsely populated sections; is it not?

General GAILEY. Yes, sir.

Mr. PASSMAN. Would it be a similar situation to trying to furnish water to semirural sections around a city?

General GAILEY. It is not only that, but part of it is in densely populated areas. If you have time, we would like to tell you about it, sir.

Mr. PASSMAN. When you say "densely populated areas," that could mean 1 house every 3 miles, and if we appropriated money for a water system that is running throughout those islands, we can say "densely populated." You can certainly figure out whether it is densely populated or not.

Under this proposed new system which has not been presented to this committee before, what is the total cost proposed at this time?

Mr. GILLIES. The total cost for this particular increment of the system is $641,000.

Mr. PASSMAN. How many families would it serve?

Mr. GILLIES. This would implement the water supply of the city of Naha—the capital city of the Ryukyu Islands—which has a population of approximately 180,000 persons.

Well under half of that population is now served with water, or has water available to it.

Mr. MILLER. Under half, you say?

Mr. GILLIES. Yes, sir.

Mr. PASSMAN. In reading from your testimony, if we may go back to that point, an amount of $641,000 is requested for fiscal 1959 to provide a much-needed addition to the water system for the densely populated areas of the central part of the Island of Okinawa?

Mr. GILLIES. Yes, sir.

Mr. PASSMAN. You use the words "densely populated." What we would like to know is how many additional families that are not now receiving water will be served with water by this project.

Mr. GILLIES. This particular project is to provide raw water to the Naha city purification plant that is already in existence, and is not fully operable at its capacity because of the lack of raw water. The precise number of additional families that would be served by this increased water supply, I would have to supply later for the record. Generally speaking, I believe that it would be fair to say that this would supply probably an additional 50,000 families.

Mr. DENTON. Families or people?

Mr. GILLIES. Families.

Mr. PASSMAN. How many families do you have in the Ryukyu Islands?

Mr. HAMILTON. There are approximately 5 members per family, sir, and the population is about 830,000; so, we have in the neighborhood of 160,000 families.

Mr. PASSMAN. 160,000 families, and many of the localities, communities, and cities are now getting water. So, this really means an additional supply of water for an additional 50,000 families?

Mr. GILLIES. I should have said 50,000 people.

Mr. PASSMAN. Off the record.

(Discussion off the record.)

Mr. GILLIES. Mr. Chairman, the central part of Okinawa is the most densely populated area of the Ryukyu Islands. This particular increment of the water system will serve only the urban area of Naha.

Mr. PASSMAN. This is a new project?

Mr. GILLIES. This is a new project; yes, sir. It is to provide water for people who now do not have water.

Mr. HAMILTON. If I may, Mr. Chairman, in addition to the family requirement for water, there is a very definite need for industrial purposes and that is an important part of this particular project.

PROPOSED ELECTRIC POWERPLANT

Mr. GARY. What is the situation with reference to the proposed powerplant?

Are you asking for funds for that this year?

Mr. PASSMAN. Oh, yes; we are.

Mr. GILLIES. Yes, sir.

Mr. GARY. How much?

Mr. TABER. Over $5 million.

Mr. WOHL. We are asking for $5,359,000.

Mr. GARY. You have one powerplant there, now, I believe?

Mr. WOHL. We have the Machinato steam powerplant, which was originally constructed with GARIOA money in 1952 and 1953.

That is the only permanent installation in the islands.

Mr. TABER. What is its kilowatt capacity?

Mr. WOHL. The capacity is, at 10 percent overload, 50.6 megawatts or 50,600 kilowatts.

Mr. GARY. How much of that is for military forces' use?

Mr. WOHL. Along with this one permanent plant, there are also militarily owned two power barges.

Mr. GARY. They are the two barges that came from Korea?

Mr. WOHL. Yes, sir.

Mr. GARY. They supplied power while Korea was cut off?

Mr. WOHL. That is correct.

Mr. GARY. After the North Koreans had taken over the powerplant?

Mr. WOHL. That is correct.

Mr. GARY. The powerplants were all in Northern Korea, and when they took over those plants, South Korea had no power, and we sent these barges over to supply power to South Korea?

Mr. WOHL. That is absolutely correct.

Mr. GARY. Now that the situation has been taken care of in South Korea, you are using the barges in Okinawa?

Mr. WOHL. Yes, sir; that is correct.

Mr. GARY. And you have been using them for how many years?

Mr. WOHL. One came in 1955, and the second in 1956.

Mr. GARY. What is your total capacity including those barges?

Mr. WOHL. The total capacity including the barges and also some standby diesel at the present time is rated at 68,150 kilowatts in firm capacity.

Mr. GARY. What are the requirements of the Government forces there—the United States Government forces?

Mr. WOHL. The Government forces are currently taking from this entire integrated system of the permanent plant, plus the barges, 75 percent of the total power output. The peak output last year was 59,000 kilowatts, of which the local economy took 15,000 and the balance was by the military.

Mr. GARY. What is the need for this new plant?

Mr. WOHL. The need of the new plant, sir, is that the approved construction already being put in place, plus the increase in growth of the local economy, both so far as their industry and population are concerned, clearly project a demand for power requirements which will exceed the total firm capacity of the existing system, both the existing permanent plant and the military supplemental barges, within the 3-year period, that it would take to construct the additional facilities that we are asking for here.

We are going to be in a situation where if we have any breakdowns in the military supplemental barges—and we have had such breakdowns already—we will not be able to meet their requirements hereafter.

Mr. GARY. When you say "new construction," do you mean new United States Government construction?

Mr. WOHL. Yes, sir; the request here, sir, is for the United States to supply an amount of $5,359,000 which will be supplemented by an amount of $2,328,000 from the earnings of the existing powerplant within the local economy to provide by July 1, 1961, a new permanent plant which would house 2 new 22,000-kilowatt generators.

The funding here requested would cover the plant—that is, the shell—and the funding for 1 of these 22,000-kilowatt generators. It

would also cover the ancillary facilities which are the mooring piers necessary to bring in the POL.

Mr. GARY. I asked you what necessitated the increase in this power, and you referred to construction and then the growth of the local economy.

Mr. WOHL. Yes, sir.

NEW CONSTRUCTION FOR UNITED STATES ARMED FORCES

Mr. GARY. Now, when you mentioned construction, were you then speaking of new construction for the Armed Forces of the United States?

Mr. WOHL. Yes, sir.

Mr. GARY. What new construction are they contemplating?

Colonel HERZER. Mr. Chairman, after the conference of President Eisenhower with the Japanese last year, the remainder of the Marine division in Japan was moved to Okinawa. They were put into tents and old quonsets that had been there since 1945. They are now building permanent and semipermanent camps. That is one of our big requirements.

The Marines are constructing a new camp on the northern part of the island, and are trying to at least make semipermanent their present camps. In addition to that, we have Nike sites going in and we have a new hospital which is just completed. We have a milk plant which is just about completed, and the Air Force has a scarcity of housing there now. They have proposed housing which should be started in the next fiscal year, and all those loads amount up to the firm increase which we have shown in our chart. You will notice we have a drastic increase between this year and 1960, and as was pointed out by Mr. Wohl, the time for construction of the new plant after the appropriation would be 3 years. At this point or sometime in this fiscal year or the next fiscal year we will exceed our present firm power capacity.

This is the line [indicating] showing a projection of usage. This [indicating] is the firm power capacity that we have at present. So, you see, at this point [indicating] we are far beyond that firm capacity.

Mr. PASSMAN. Will the gentleman yield?

Mr. GARY. Yes, sir.

Mr. PASSMAN. That is about the same chart you had last year; is it not?

Mr. WOHL. Very similar to it.

Mr. PASSMAN. The Government has auxiliary plants or barges which are furnishing part of the electricity to the military; does it not?

Mr. WOHL. Yes, sir.

Mr. PASSMAN. Is the number of marines that was transferred classified information?

Mr. WOHL. No, sir.

Mr. PASSMAN. What number of additional personnel did you bring over?

Colonel HERZER. About half a division. I would say approximately 10,000 men.

Mr. PASSMAN. Is that permanent or semipermanent?

Colonel HERZER. That is permanent. They have no other base, and they are building permanent camps for them in many instances.

OPERATION AND CONTROL OF POWERPLANT

Mr. PASSMAN. This would be part of the Ryukyu Electric Co. plant; would it not?

Mr. WOHL. That is correct.

Mr. PASSMAN. It would be part of the Ryukyu Electric plant, and not the property of the government? Or property of the military?

Mr. GILLIES. That is correct, sir.

Colonel HERZER. Run by the military and the REPC buys the electricity by arrangement with the military.

Mr. WOHL. The military, sir, operates the integrated system, and pays a rental to this Ryukyu Electric Power Corp., which is the revenue derived from the system to be for the local economy.

Mr. GARY. Has there been any change in the management or operation or control of this setup since last year?

Mr. WOHL. The operation as I understand it is the same. There is a provision this year that the net revenues of the local economy operation will go into the civil administration general fund to be utilized for a further expansion of the system which is partly proposed here in the amount of $2 million and some odd dollars, and also for other additional benefits to the local economy.

Prior to this year there had been a provision that the net revenues went directly into the general funds of the government of the Ryukyu Islands. There has been a change in that nature of it.

Mr. DENTON. The revenues would go to the United States civil administration?

Mr. WOHL. The revenue goes to our civil administration and is used for projects which the civil administration and the Congress approved, and funded projects for.

Mr. DENTON. Now, do you propose to add the new plant to that system, and operate it in exactly the same manner as the one you are operating now?

Mr. WOHL. That is the proposal.

Mr. DENTON. Under the same management?

Mr. WOHL. Yes, sir.

Mr. PASSMAN. Is it not true that in prior years you had an engineering firm on the Pacific coast that you paid a retainer to manage the plant?

Mr. WOHL. That is still true, sir.

COST OF ENGINEERING AND MANAGERIAL SERVICES

Mr. PASSMAN. What is the cost of the engineering managerial expense per year?

Colonel HERZER. At present it is $75,000 per year.

Mr. PASSMAN. Do they render any service other than supervision?

Colonel HERZER. Yes, sir.

Mr. PASSMAN. What services do they render?

Colonel HERZER. I can give you one example, sir. Our main power barge broke down when a piece of equipment blew up recently, and

the firm took over in the States and got a new part manufactured, and flown out to us.

At the time the barge was out because of the use of inefficient facilities it cost us $1,000 a day as an increased cost.

So that alone I would say would pay the fee for a year.

Mr. PASSMAN. Had you not had them, you could have called the same manufacturing plant and in all probability could have gotten the same part flown out; could you not?

Colonel HERZER. There would have been a possibility, sir, but it has not worked out that way in the past.

Mr. PASSMAN. But it could be that you could have called the same manufacturer; ordered by the part number and had the same part flown out?

Colonel HERZER. There is no part available of this sort, sir. This is the only one, and they had to first get the drawings, take them to the firm, push the project on through and get it out to us.

This was not standard item at all.

Mr. PASSMAN. For clarification purposes, is this a tailormade or specially built plant?

Colonel HERZER. Yes, sir; there were only a few of these plants built.

Mr. PASSMAN. Would the manufacturer that built the plant have the plans on it back at their plant?

Colonel HERZER. They may have.

Mr. PASSMAN. Would it not be well to have it in your records? If you have something out there that is subject to breakdown that was tailormade by some manufacturing plant in America, would it not be well for you to have a record of it?

In most cities you can go back and trace a water main that was put down 25 years ago. This is just a suggestion. To say that you have to pay a firm $75,000 a year to find the company that built the plant to get the part—you ought to have that in your own records.

What other service do they render for that $75,000?

Colonel HERZER. Mr. Chairman, that is being reduced to $70,000.

Mr. PASSMAN. All right; $70,000.

Colonel HERZER. They supply highly competent technical people.

Mr. PASSMAN. I would not question that, but how many people do they station in Okinawa for the $70,000?

Colonel HERZER. Right offhand, I do not know. I will be happy to supply this for the record.

(The information follows:)

The contractor, Gilbert Pacific, Inc., employs on Okinawa 40 non-Ryukyuans (mainly American), most of whom are serving in supervisory capacities, and also employs 390 Ryukyuans, giving a total employment figure of 430. The contractor manages, operates and maintains (including provision of minor additions, extensions and alterations) the electrical facilities of the Integrated Island Power System which includes the Machinato steam power plant, the power barge *Jacona*, the power barge *Impedence*, and six standby diesel generating plants. The system also includes four 69/13.8 kilovolt substations, 15 miles of 69 kilovolt overhead transmission lines, 23.2 miles of 13.8 kilovolt overhead transmission lines and 10 miles of underground cable transmission lines.

The contractor procures necessary maintenance parts and supplies, subject to the approval of the contracting officer, and maintains an appropriate stock level of maintenance parts and supplies procured by the contractor or supplied by the military. The contractor recruits and employs all personnel required for the operation and maintenance of the system's facilities, assuring that they are

competent and fit. The total cost of the contractor's operation is borne by the military. The cost is estimated to be $4,623,796 in fiscal year 1959. The contractor's fee of $75,000 constitutes complete compensation for the contractor's services, including profit and all general overhead expense within the contractor's own organization.

Mr. PASSMAN. That is, on the job?

Colonel HERZER. I would say about 60, sir, offhand.

Mr. PASSMAN. They have 60 employees that they are paying out of the $70,000?

Colonel HERZER. No.

Mr. PASSMAN. How many employees do they pay out of the $70,000?

Colonel HERZER. They are not paying any of them out of that.

Mr. PASSMAN. This is $70,000 that you give them to stand by to render service if you request it?

Colonel HERZER. That is their only profit. We pay the salaries of the people through them. That is the only fee they receive for all their services.

Mr. PASSMAN. But, they are back in the States, and they get $70,000 for their consulting engineering; do they not?

Colonel HERZER. Yes, sir.

Mr. PASSMAN. And, they have no personnel out there?

Colonel HERZER. But, that is the nature of their operation. Going a little further, Mr. Chairman, on the next contract it is planned to go out on open bids for worldwide bidding to other firms of this nature to operate it. The reason this firm was brought in originally was that a Japanese unit was operating the plants, and it just did not operate efficiently.

This firm was brought in at that time and they have increased the efficiency so that the savings per year actually are much greater than the fee that is paid them, but we do in the future anticipate open bidding to bring in other firms at a reduced fee, and probably a reduced overall operating expense.

Mr. PASSMAN. Do you not think you could save money by having a trained engineer-consultant there to work with the many employees of this electric system, who could give good on-the-spot supervision and guidance when something happens to be in a bad state of repair?

I do not quite understand why you are paying some firm several thousand dollars out of this appropriation just to supervise this operation without having personnel on the spot there. It would appear that you could recruit some consulting engineer or take one from the Corps of Engineers—and you have some great engineers in the corps—at a substantial savings.

Colonel HERZER. That might be true, sir, but in a general what we are doing is this: These people are hired by them and paid by us.

As you know, the larger the corporation, normally the better the service, and the cheaper the operation.

We are in an isolated area in Okinawa with a small operation, comparatively speaking.

We are getting the same service from this firm which operates a system in the States as from a large corporation, and we are getting the full services of their operation and of their entire plant capacity.

If we require any other services, then that is paid out of the $70,000.

Mr. PASSMAN. There is the possibility that you can go at least many months without requiring any service from them?

Colonel HERZER. I would say not, sir.

Mr. PASSMAN. How long could you go and how frequent are your calls on them for some consulting service?

Colonel HERZER. I would say that we have almost daily contact with them, sir, for various items.

Mr. PASSMAN. Of course, that involves a long-distance telephone call, dispatching cables, and so on?

Colonel HERZER. It would to any firm unless we were to build up and maintain all of the necessary supplies on Okinawa in anticipation of such breakdowns. This, under the existing situation, requires quite a supply of parts for standby alone. If we did not have their services, or the services of some other company in the States, which could expedite and get the correct items, then we would have a tremendous warehouse of supplies there to anticipate needs, or would have to go through another organization or would have to pay additional costs.

However, we still do not think that this is the ultimate. We are working on it daily with them, and we intend to further reduce their fee in the future, if possible, or employ other people who may do it, at a lesser rate.

Mr. PASSMAN. Politely and courteously, we are still talking about a light plant in Okinawa and you have a light plant in almost every city, village, and town of the United States, and throughout the world.

Colonel HERZER. Yes, sir.

Mr. PASSMAN. Is it not customary for even a city to have a consulting engineer or supervisor whereby they can supervise the proper maintenance of such a plant and if a breakdown occurs they can contact the manufacturer directly rather than paying some consulting firm a fantastic fee to give that advice?

Colonel HERZER. They normally have their own organization that is large enough to include those people that are paid out of the $70,000 right in their organization. We can exclude those and have merely operating people on Okinawa by doing that. There are numerous services which they render under the terms of the contract which it would be difficult to spell out in the short period of time we have available here. This is a well over $4 million a year operation and this is the only fee that is paid to anyone.

Mr. PASSMAN. You are bound to have a lot of trained personnel and a lot of supervisors in that type of operation; are you not?

Colonel HERZER. That is correct.

Mr. PASSMAN. I just cannot understand why you would have to pay an engineering firm thousands of miles away $70,000 to tell you what to do if you get into trouble out there, but we shall not pursue it further.

Mr. Alexander, do you have any questions?

RENOVATION AND REPAIR OF USCAR OFFICE BUILDING

Mr. ALEXANDER. I notice in the incidental operating expenses you have a budget of $52,000 and included in that you have an amount for the United States Civil Administration Office Building for some $27,000. What type of building are you operating in now?

Mr. GILLIES. We are occupying a reinforced-concrete building jointly with the Government of the Ryuku Islands.

Mr. ALEXANDER. How long have you been in this building?

Mr. GILLIES. The building was completed in 1952.

Mr. ALEXANDER. Well, it is a rather new building; is it not?

Mr. GILLIES. Yes, sir.

Mr. ALEXANDER. Was it built for that purpose?

Mr. GILLIES. Yes, sir; it was.

Mr. ALEXANDER. You have not shown any particular justification for renovation and repair funds.

Mr. HAMILTON. Mr. Alexander, could I speak to that point?

Mr. ALEXANDER. Yes.

Mr. HAMILTON. In the first place, the building has been occupied for over 5 years now, and it is well known that sandblasting by typhoons and the weathering of metal as a result of the high humidity in Okinawa contribute to the early deterioration of buildings. These expenses for the rehabilitation and renovation of the USCAR headquarters building are designed to catch the structure at a point before it gets into serious disrepair.

I have an itemized list of the changes and improvements that would be purchased with the $27,000. However, the most important is the procurement and installation of a 50-kilowatt standby generator at a cost of $13,000.

Very often during the day the power will go off from the local system—the local distribution company—4, 5, and 6 times a day. Very often following typhoons the power is off for an extended period of time.

Mr. ALEXANDER. You are requesting funds for a central powerplant and also for a standby generator; you are asking in two places for the same thing are you not?

Mr. HAMILTON. No, sir; the powerplant that is now in being, the Machinato plant, provides power to the military but power also is sold to five private Ryukyu distribution companies. Where the USCAR headquarters building is located, in downtown Naha City, power is taken from one of the local power companies whose standards of performance are not yet up to the normal military nor the normal stateside level.

Mr. ALEXANDER. If you got your new powerplant as requested in the other appropriation item, that would not affect this requirement? Is that what you are saying?

Mr. HAMILTON. That would not affect this requirement; no, sir. The other changes involve the exterior painting of the building, the replacement of exterior lighting fixtures, interior painting, replacement of screens and ceiling tile, a complete overhaul of the elevator, the installation of new electrical outlets, and so on.

SUPPORT OF GOVERNMENT SERVICES AND PROJECTS

Mr. ALEXANDER. Just briefly, going to the item for "Support of Government services," you are asking for $1 million this year. Why are you requesting such a large increase in one year just for "Support of Government services?"

General Gailey. The main item, Mr. Alexander, is to put in a system of effective control of tuberculosis out there. It is something that we have long needed, but, as you know, in making up a budget you sometimes cut things off that you really need in order to keep it down. This has been long needed, and we want to put in a system where these people have some kind of control at home instead of having a lot of walking cases. The doctors who are out there have recommended this highly, and they have recommended it for some years.

The $170,000 item is a contribution toward improving the police system in various respects, such as putting in callboxes and general modernization and improvements of that nature.

Mr. Alexander. That is all, Mr. Chairman.

FINANCING OF POWERPLANT

Mr. Passman. Mr. Denton, do you have any questions?

Mr. Denton. This powerplant seems to be making money. Why can you not finance that like anyone else does: issue bonds and charge rates that would pay it off?

Mr. Gillies. The availability of credit in the Ryukyu Islands to meet all of the requirements is inadequate at the present time.

Mr. Denton. Have you tried the Development Loan Fund, the Export-Import Bank, and similar sources?

Mr. Gillies. Yes, sir; we have discussed it with the Export-Import Bank. The bank feels that because the Ryukyu Islands are an area under United States administration it is not within the scope of the bank's activities as far as advancing the loan is concerned. Moreover, the bank considers that it would be inappropriate for it to finance another government agency—the Department of the Army—which has this responsibility.

This was taken up last year in the Senate appropriations hearings, and a letter was sent from the committee to the Export-Import Bank. A reply was received July 3, 1957, indicating the bank's reluctance to finance this project.

Mr. Denton. Why could you not change your setup and avoid that situation? After all, you have been giving this power to the Ryukyus. You are not any more, however; you used to give the power to the REPC, and they turned it over to the Ryukyus, but now the revenue goes to the United States civil administration?

Mr. Gillies. Yes, sir; that is right.

Mr. Denton. Could you not work out an arrangement that would permit Okinawa to build its own powerplant and loan them money for that purpose?

Mr. Gillies. The financial capability of the Ryukyu Electric Power Corp. at the present time does not extend beyond the $2 million that it will itself invest in this new plant.

The $5 million plus asked from appropriated funds is to supplement the resources of the electric company.

Mr. Denton. Where are you getting the $2 million?

Mr. Gillies. From earnings on the power that is sold.

Mr. Denton. Do you mean that you are issuing bonds against such earnings?

Mr. GILLIES. No, sir; these are earnings from the present operations, and earnings during the next 2 or 3 years that would be available to the power corporation for investment.

Mr. DENTON. The power corporation will earn $2 million in the next 3 years?

Mr. GILLIES. No, sir; that includes its present earnings and what it has earned over the past 5 years.

Mr. HAMILTON. That would represent approximately 4 years of earnings.

Mr. DENTON. Why could you not work out some kind of a funding arrangement where the operation over a period of twenty-odd years could pay it off?

Mr. O'FLAHERTY. Mr. Denton, not only was this matter taken up with the Export-Import Bank a year ago, but since that time we have again approached them to see whether there was any change in their thinking, and whether they could advise or assist us because of the conference which we had last year with the Congress in this respect.

We also approached the World Bank—the United States representative at the World Bank—and the International Monetary Fund, and they had the same view.

Mr. DENTON. Have you tried the Development Loan Fund?

Mr. O'FLAHERTY. No, sir; we have not.

Mr. DENTON. Have you ever discussed the possibility of working out a different financial setup so it might be taken care of?

Mr. O'FLAHERTY. We have given it a great deal of thought, and we are at something of a loss because of the nature of the organization, and the political status of the area.

That is a complicating factor which always comes up.

Mr. DENTON. It seems to me that we do not do things this way in our country. If you have something that is making money, it ought to be paid for by the people who use the electricity. That is what we do in the United States. That is the free-enterprise way to do it.

Mr. O'FLAHERTY. Well, if the Congress would give us assistance in determining a way to obtain this money without appropriations, we would be very happy to have it.

Mr. DENTON. Could you not figure out some arrangement whereby the power company could build this plant?

Mr. O'FLAHERTY. As General Gailey pointed out, the company has not reached the capacity to undertake matters of this nature.

Mr. DENTON. Would not the same thing be true with reference to the water system? That is strictly for Okinawan use; is it not?

Mr. O'FLAHERTY. Yes, sir. That will be held and operated by an instrumentality of the United States Government. It is a corporate group similar to the Ryukyu Electric Power Corp.

Mr. DENTON. Do you charge them water rates?

Mr. O'FLAHERTY. Yes, sir.

Mr. DENTON. There, again, I do not see why you do not try to finance that the same way we do in America.

Mr. O'FLAHERTY. Eventually, sir, these investments would liquidate themselves, but it is a question of getting it done within this time limitation.

Mr. DENTON. I appreciate the difficulty involved here, because of the fact that this is operated by the Army, and that makes it difficult

for a loan agency to handle it. But I would think you could figure out some kind of a financial structure that would avoid the problem. I am sure you could find many utilities that would do it for you.

Mr. O'Flaherty. It is complicated; yes. If the United States Government guaranteed the loan, I think that would be true.

Mr. Denton. Of course, everyone wants to do business if the Government will guarantee the loan. Anyone will take a risk if the Government will pay them the loss. I have heard that so much that it does not appeal to me.

Mr. O'Flaherty. In foreign areas this would be true.

OWNERSHIP OF POWER PLANTS AND DISTRIBUTION OF POWER

Mr. Denton. Now, if I remember this setup on the electric power correctly, the United States Government built the powerplant and provided these barges that generate electricity. The Army owns them, and the Army leases them to the Ryukyu Corp.

Mr. O'Flaherty. The Army does not lease the barges. They put power into the same system that the powerplant puts in there. This is the Ryukyu Electric Power Corp.

Mr. Denton. What is that? Is that a Ryukyu Corporation?

Mr. O'Flaherty. No, sir; it is an instrumentality of the United States Government civil administration, established under a charter of the civil administration.

Mr. Denton. The Army leases this power to them and then the Army, Air Force, or the Navy pays for the power they use?

Mr. O'Flaherty. They pay for the power in terms of power.

Mr. Denton. Then, you have the various distribution companies over there, and they also get power from this plant?

Mr. O'Flaherty. The Ryukyu Electric Power Corp. is not engaged in distribution.

Mr. Denton. The distributing companies do that?

Mr. O'Flaherty. The local distributing companies; yes, sir.

Mr. Denton. Are they the same as the REA's over here?

Are they co-ops?

Mr. Hamilton. No, sir; these are small, private companies.

Mr. Denton. Do they make a profit?

Mr. Gillies. Yes, sir.

Mr. Denton. Who gets that? The stockholders?

Mr. Hamilton. That is correct.

Mr. Denton. Who owns that stock?

Mr. Hamilton. It is fairly widely held by Ryukyuan stockholders.

Mr. Denton. And, then, the profit that is made goes to whom? The United States Government?

Mr. Hamilton. The profit that is made by the wholesaler, which is the Ryukyu Electric Power Co., is retained by the company, an instrumentality of the United States civil administration.

EARNINGS OF POWER COMPANY

Mr. Denton. About how much profit do you make a year?

Mr. Hamilton. Approximately half a million dollars.

Mr. Denton. You are making half a million dollars a year?

Mr. Hamilton. Yes, sir.

Mr. FORD. Could we have in the record a list of the earnings on a yearly basis?

Mr. DENTON. Yes; would you do that?

Mr. HAMILTON. Yes, sir.

(The information requested follows:)

The following is a comparative statement of profit and loss for the Ryukyu Electric Power Corp. for the periods covering fiscal year 1957 through fiscal year 1959:

	Fiscal year 1957, actual	Fiscal year 1958, estimate	Fiscal year 1959, estimate
Earnings:			
Sale of electricity	$1,013,439.34	$1,258,000.00	$1,404,000.00
Less cost of electricity	956,256.34	1,088,000.00	1,195,200.00
Gross earnings on sales	57,183.00	170,000.00	208,800.00
Other earnings:			
Rental income from lease of power facilities	600,000.00	600,000.00	568,200.00
Interest income from time deposits	0	0	25,000.00
Lease of powerplant in outlying islands	0	1,000.00	1,000.00
Profit on release of diesel powerplant substation to U. S. Army	0	1,606.14	0
Total other earnings	600,000.00	602,606.14	594,200.00
Total earnings	657,183.00	772,606.14	803,000.00
Expenses:			
Operating expenses (wages, supplies, and services)	1,714.17	12,980.00	5,000.00
Depreciation expenses	286,077.12	265,630.77	268,693.96
Total expenses	287,791.29	278,610.77	273,693.96
Net earnings	369,391.71	493,995.37	529,306.04

Mr. DENTON. I cannot see why you cannot finance that with half a million dollars a year in income.

Mr. HAMILTON. It is this amount which permits us to make a request of approximately $5.4 million rather than for the total cost of over $7.5 million.

Mr. DENTON. You are paying this $2.5 million cash out of your earnings? Have you set up a sinking fund for this purpose?

Mr. HAMILTON. The cash is being held in reserve for this purpose.

OWNERSHIP OF POWERPLANTS AND DISTRIBUTION OF POWER

Mr. TABER. Do you mean that we have paid for the building of these powerplants, have turned the operation over to a private organization?

Mr. GILLIES. No, sir; that is not right.

Mr. TABER. Who built the plant?

Mr. GILLIES. The plant was built with United States appropriated funds—GARIOA funds. It is owned by a corporation which is an instrumentality of the civil administration, and the plant leased to the Department of the Army, which operates that plant together with the power barges which turn out power over an integrated islandwide system for use by the military and the local economy.

Mr. TABER. Is the corporation which owns the facility a United States-owned corporation?

Mr. GILLIES. It is a public corporation chartered by the civil administration, and the civil administration is a United States instrumentality.

This is an agency of the Civil Administration.

Mr. HAMILTON. To further answer Mr. Taber's question, the distribution facilities which are owned by the five private Ryukyuan distribution companies were all constructed with capital raised by those companies, and are privately owned.

Mr. TABER. Raised by the companies themselves?

Mr. HAMILTON. That is correct.

Mr. DENTON. The local distributing companies?

Mr. HAMILTON. That is correct.

Mr. GILLIES. This Ryukyu Electric Power Corp. owns only the generating and distribution lines. The local Ryukyu distribution companies own the subsidiary distribution systems.

Mr. DENTON. Did the United States advance money to these local distributing companies in order that they could build those powerlines?

Mr. HAMILTON. Those companies, sir, raised part of their capital by stock subscription; they borrowed part of the capital from the local Ryukyuan banks, and they also borrowed part from the Ryukyu Reconstruction Finance Fund, which is a long-term development fund, also an instrumentality of the United States Civil Administration.

CONSTRUCTION OF COURT BUILDING

Mr. DENTON. Let us get back to this proposed courthouse—and I sympathize with you very much in trying to build a courthouse—I have two places in my district where the Federal court meets, and some 9 years ago I appeared before the Public Works Committee in behalf of new Federal buildings there.

They told me my case was so strong that I need not say anything, and that both the General Services Administration and the Post Office Department had used one of the post offices in my district as justification for needing a new building.

We still have the old building, and we have not built the new one in 9 years.

I remember one occasion when the plaster fell on a jury while they were hearing a case. I would like to have some assistance in getting some Federal buildings in my congressional district. We need two of them very badly.

TUBERCULOSIS CONTROL

What about this tuberculosis problem? What item is that under? How much money are you requesting?

Mr. GILLIES. That is $330,000.

Mr. DENTON. How would that be used?

Mr. HAMILTON. Sir, that is needed to take care of tubercular patients. It is a government of the Ryukyu Islands' program to attempt to make an inroad into the backlog of an estimated 20,000 active tubercular cases in the islands.

There is a total program planned for fiscal year 1959 which includes both inpatient care and outpatient care.

Mr. DENTON. Do you have a tubercular hospital there?

Mr. HAMILTON. There are small tubercular hospitals, and there are tubercular wards in most of the general hospitals.

Mr. DENTON. Is it not true that they are using many of these new drugs and they have it very much under control, and they can cure it much better now than they could before?

Mr. HAMILTON. Many of these became advanced cases before those remedies were available.

Mr. DENTON. Of course, they use those remedies on pretty advanced cases in this country.

Mr. HAMILTON. But you admit, sir, it does take specialized care to bring about a cure. The total program that the GRI expects to carry on during this year will be approximately $750,000. That involves approximately 680 to 700 hospitalized patients on an annual basis at an average cost of $730 per patient.

Mr. DENTON. Are you X-raying lungs like we do in this country?

Mr. HAMILTON. Yes, sir.

Mr. DENTON. And then you are setting up hospitals and are training personnel just the way we do?

Mr. HAMILTON. That is correct. Further, because of the lack of sufficient hospital beds for tubercular and other patients, there is in effect an outpatient program which provides home care for an additional 5,000 tubercular patients.

Mr. DENTON. We have had the same situation with reference to the Indians, and the Eskimos.

We have made considerable progress with the Indians, but not so much with the Eskimos.

Mr. GILLIES. The major problem is to get into hospitalization those cases that remain infectious in the communities despite the home-care program.

Mr. DENTON. I think that is a very fine program.

Mr. HAMILTON. A point I would like to make, sir, is that our proposed contribution to the tuberculosis control program will be only slightly over 40 percent of the total cost of the program to be carried on by the Government of the Ryukyu Islands during this year.

EXTENT OF COMMUNIST INFLUENCE

Mr. DENTON. Let me ask you another question: What seems to be the trouble there whereby the Communists win some of the elections when we have done as much for these people as we have?

Mr. GILLIES. The Communists have not won the recent important elections, sir. The last election for the legislature of the Government of the Ryukyu Islands where the 29 legislators were elected, the results were that out of the 29 only 5 leftwing representatives were elected, of which only 1 was a member of the Okinawa People's Party, which is the Communist-front party. One out of 29 was the record.

Mr. DENTON. That is very encouraging, but we did have a Communist mayor elected in one of the principal cities, and then he was removed, and they elected another man who was not friendly to the United States.

Mr. GILLIES. That is true, sir. That is a peculiar situation in the city of Naha, and it does not reflect the general feeling of the Ryukyu

people, which we feel was accurately reflected in the election of the legislature. The recent mayor, while he is not a hard core member of the Okinawa People's Party, it is true he has shown leftist tendencies, and was supported by the Okinawa People's Party. But there has been a recent break in this leftwing element, and it appears now that there may be a movement of this mayor and his supporters further to the right.

Mr. DENTON. Is there anything in our administration of those islands that makes the people feel we are trying to interfere with their economy so much that they are turning against us?

Mr. GILLIES. No, sir; I do not think that that is the case. They of course feel that they are separated from their homeland, Japan, and they feel that as long as the United States maintains the authority to exercise governmental powers there that they expect at least the same amount of assistance in this economically deficient area as they would get if they were under Japanese administration.

Mr. DENTON. I think that is all.

Mr. ALEXANDER (acting chairman). Mr. Miller, do you have any questions?

Mr. MILLER. I have only a couple of questions, Mr. Chairman.

Following up on what Mr. Denton has said, do you feel that the political situation there is improving or is it deteriorating since last year, or the year before?

Mr. GILLIES. We feel that the political situation there has definitely improved in the past year.

GROWTH OF PRIVATE ENTERPRISE

Mr. MILLER. Do I gather from your outline of expected electrical power demands, and other indications, that there is a healthy growth of the economy out there on a private-enterprise basis?

Mr. GILLIES. Yes, sir; the economy is developing on a free private-enterprise basis.

The area generally is an economically deficit area. There are very limited natural resources, and the population cannot be supported on the basis of an agrarian economy. So there has to be created other types of employment. That is being done, and there are productive enterprises being established. There are available long-range credits for further economic development, but that is still inadequate to meet all of the requirements for as rapid economic development as there should be to support the population.

FINANCIAL ASPECTS OF UNITED STATES CIVIL ADMINISTRATION

Mr. MILLER. With reference to your financial problems on this electric-power situation, do I gather that your situation is complicated and even unique in the fact that this operation is really carried on by the United States Government directly or through corporations very much as they are in the Canal Zone, but that unlike the Canal Zone, we have a rather unusual status in that we do not claim this to be American soil, and we are merely there on an occupational basis? Is that the trouble?

Mr. GILLIES. Yes, sir; under the Treaty of Peace with Japan the United States exercises all powers of administration, legislation, and

jurisdiction, and it may continue to exercise such powers as long as it determines the need therefor.

Mr. MILLER. If we made a definite claim of title to the real estate involved, or if it were like most military or other overseas installations, it would be carried on by the Armed Forces under military construction appropriations?

Mr. GILLIES. Yes, sir.

Mr. MILLER. In the case of a foreign country where the government is completely in the hands of the local authorities, you have machinery through the Export-Import Bank and the various agencies set up under the mutual security program to get the money, but as I understand it, in your case you are in a grey area where there is no one else just like it, and where you do not meet the legal requirements for loans in foreign lands, and yet you cannot come in and ask for funds under the military appropriation?

Is that a summary of your troubles?

Mr. GILLIES. I think that is a very fine summary of the situation.

Mr. WOHL. There is one further complication I would like to point out, and that is that of necessity the power system we have there is now a mixture of the existing plant financed by the GARIOA funds for the benefit of the local economy and the military-owned adjuncts to the system which must be operated as an integrated unit in order to meet the combined demands of the military and the local economy.

Mr. MILLER. In other words, you have a patchwork installation there, which draws its legal status from two or three different sources, and yet it has to be run as a unit, or none of them are any good?

Mr. GILLIES. That is correct.

Mr. WOHL. Recognizing the same problem, originally the initial funding of the plant that we now have was provided with government-in-occupied-areas funds in order to meet the joint local economy requirements—both power and a source of revenue for it—and meet the military requirements which are basic to our being in the area.

Mr. MILLER. You also, of course, have the geographic difficulty of being removed from sources of supply and, as I understand it, you have to have special requirements because of typhoons and the unusual rigors of the particular area from the standpoint of storms and climate?

Mr. WOHL. Yes, sir.

Mr. MILLER. Did I understand that as far as you have been able to determine, you have exhausted every other way of getting this matter financed by any normal outside means and you are in the position of having to come before this committee on the same basis that the armed services come before the sister committee for military construction?

Mr. WOHL. That is correct, sir.

Mr. MILLER. That is about the only way you can solve it?

Mr. WOHL. We have exhausted all possibilities of locating funding. To the extent that these do exist, and it is in the current revenues of the Ryukyu Electric Power Co., and we proposed that some $2.3 million, which would be their combined revenues for a 4-year period, would be allocated to this proposed plant, but the plant itself would cost $7 million plus, in order to construct, and everything beyond that and beyond our capability of meeting with local funds is what we are requesting here, which is the $5.3 million.

Mr. MILLER. Switching back to the request for funds for entertainment of visiting dignitaries, and so on, as I understand it, the present organization has been in operation for only a few months?

Mr. GILLIES. Yes, sir.

Mr. MILLER. That previously the requirement of taking care of visitors, dignitaries, and diplomats, and so on, was carried on by the military?

Mr. GILLIES. The former chief official of the United States civil administration was the commander in chief, Far East, whose offices were in Tokyo. Prior to the change in the theater command structure, July 1, 1957, that was true.

On that same date the chief official of the civil administration became a local official, the High Commissioner of the Ryukyu Islands. So he has assumed the responsibility of the United States representation previously exercised by the Governor in Tokyo.

Mr. MILLER. In the past, when you had this problem, it was either handled through the military or the local people had to put it up out of their own pockets?

Mr. GILLIES. Yes, sir.

Mr. MILLER. And you do have a very necessary requirement of paying the normal courtesies to visiting dignitaries, missions, and so forth?

Mr. GILLIES. Yes, sir.

Mr. MILLER. As it is a new setup, it has not been funded this way before at this particular place?

Mr. GILLIES. That is correct.

Mr. MILLER. And if it is not funded here, it is going to come out of the pocket of someone else?

Mr. GILLIES. Yes, sir.

Mr. MILLER. With respect to the so-called whisky business—and there is very little whisky—I imagine there are some local wines and oriental drinks, but it is absolutely necessary if you are going to conform to the customs to have some form of beverage under those circumstances; is it not?

Mr. GILLIES. That is correct.

Mr. MILLER. It would be absolutely disruptive of good relations with our friends and the visitors if we did not have some sort of entertainment?

Mr. GILLIES. I think that is correct, sir.

Mr. MILLER. And the monetary value is relatively small, is it not?

Mr. GILLIES. Yes, sir.

Mr. MILLER. It is not heavily taxed as it is elsewhere?

Mr. GILLIES. Yes, sir.

Mr. HAMILTON. In the hierarchy of United States officialdom the High Commissioner, I believe, rates a 19-gun salute. He is a very senior member of the United States official family, and as such, certainly requires the funds to adequately represent the United States.

Mr. MILLER. And if we do not have proper representation, it would not be in the national interest?

Mr. HAMILTON. No, sir.

Mr. FORD. Am I correct in understanding that the military services—the United States Armed Forces—do pay someone for the power which is used by the military?

Mr. WOHL. No, sir; the situation is this:

We have as an integrated power system the Machinato powerplant originally funded by GARIOA money. This is owned by the Ryukyu Electric Power Corp., and is leased to the Army.

The Army also owns two power barges which are tied up and integrated into the system, and six isolated standby diesel units.

These, as a whole, are operated by the Army under an operation contract with the Gilbert Pacific Co. The cost of maintenance and operation are borne by the Army but the Gilbert Pacific Co. does the management and operation and receives only a fee. The power that is generated is then the power of the military system as the first priority user. The Army draws all of its power requirements, the Air Force, the Navy, and the Marines, also get power, and this power is basically paid for with maintenance and operation funds of the military system.

As the rental paid to the Ryukyu Electric Power Corp. the power corporation receives from the system enough kilowatts that comes to some 30 million kilowatt-hours to cover the depreciation on the original plant on a 27-year straight-line depreciation and a 5-percent interest on the depreciated value of that property.

Also, the Ryukyu Electric Power Co. receives at cost such additional power as is available out of the system for the local economy, and the power that is received by the Ryukyu Power Corp. is sold by it to five local distribution companies which then retail it out into the local economy. It comes back to this: The military operates the system and pays simply the costs of generating that power. Included in their cost of generating the power is a rental which they pay for the lease of this Machinato plant which is an asset of the local economy.

Mr. FORD. But, in effect, a fee is paid for power rental out of maintenance and operation funds of the various services?

Mr. WOHL. Yes, sir.

Mr. FORD. It has to be that way.

Colonel HERZER. In effect that is correct, just as if we were buying power from any private company.

Mr. FORD. Is money paid by the services out of their maintenance and operation funds to this organization for the power which is delivered?

Colonel HERZER. No, sir.

Mr. FORD. The power does not go through any of these five locally owned facilities?

Colonel HERZER. No, sir; the military take their power directly.

Mr. FORD. Can you put in the record the amount which has been paid out of the maintenance and operation funds by the respective services? It can be a total figure rather than on an annual basis. I imagine those records are available; are they not?

Colonel HERZER. They are ready to be included in response to a prior question.

Mr. WOHL. What you are asking is what is the military cost of operating the system?

Mr. FORD. Put it the way I wanted it: What the military pays for the services which they receive.

Colonel HERZER. That includes the depreciation and rental which are included in the cost?

Mr. FORD. I am interested only in what the military pays for the electrical energy which they receive for their necessary installations.

Colonel HERZER. Yes, sir.

(The information requested follows:)

The estimated net expenditure by the military from operations and maintenance funds for fiscal year 1959 for the electrical energy which they receive for their necessary installations is $3,996,796. The derivation of this estimate is shown below:

Gross cost of production for all power produced by the Integrated Island Power System	$4, 623, 796
Less reimbursement from Ryukyu Electric Power Corp. for power purchased in excess of annual rental	627, 000
Net charge to military operations and maintenance funds for electrical energy received by the military	3, 996, 796

FINANCING OF NEW POWER PLANT

Mr. FORD. I presume, if you wanted to, over a period of years you could finance this new powerplant by just increasing the charges against the maintenance and operation funds for the various services: could you not?

Mr. WOHL. One possible method is that.

Mr. FORD. It is an easy way to do it.

Mr. WOHL. One possible method would be to increase the cost of power, but the cost of power would have to be increased not only to the military but also, of course, to the local economy. I would like to point out that the local economy is currently paying a level of rates for electricity in the Ryukyus which is twice that paid in Japan.

In other words, we already have a very high rate structure.

Mr. FORD. When were the rates last increased?

Mr. WOHL. I cannot speak to that.

Mr. GILLIES. The rates have not been increased. It is just that the cost of generating thermal power with imported fuel is naturally high in Okinawa.

Mr. FORD. Have your costs gone up in the last several years?

Actually, our costs of production have gone up only in that the cost of fuel oil went up during the Suez crisis. Actually, they are now starting down again. However, there are other costs, and by the time it reaches the consumer, it is higher.

In Okinawa all the distribution lines had to be funded, and the funding there may have run the cost up considerably.

REVENUES RECEIVED FROM THE MILITARY FORCES

Mr. FORD. What percentage of the total revenue received by the Ryukyu Power Co. is derived from the charges levied against the military?

Mr. WOHL. I can give you that in a moment, sir:

For the fiscal year 1959 the estimated revenue from sales of electricity is $208,800.

The income from the rental paid by the military is $594,200.

The rental paid by the military covering two items—(1) the depreciation on the original amount and (2) the 5-percent interest on the depreciated original capital——

Mr. FORD. The military pays about three-fourths and the other revenues about one-fourth?

Mr. WOHL. Yes, sir.

CONTRACT WITH MANAGEMENT COMPANY

Mr. FORD. When was this contract signed originally with this management company?

Mr. WOHL. It was, I believe, at the time that the Machinato plant came into operation?

Mr. FORD. About when?

Colonel HERZER. I may be able to give you that date in just a moment, sir.

Mr. WOHL. It was in 1954.

Colonel HERZER. I believe that is correct.

Mr. FORD. Will you please insert it in the record?

Colonel HERZER. Yes, sir; we will.

(The information follows:)

The contract with Gilbert Pacific, Inc., for the management, operation, and maintenance of the electrical facilities of the Integrated Island Power System was originally signed on January 5, 1954.

Mr. FORD. Was there any similar arrangement in existence prior to that time?

Mr. GILLIES. No; there was no similar arrangement. This was the first powerplant that was built on Okinawa.

Mr. FORD. The arrangement came into being as a consequence of the completion of the Machinato plant?

Mr. GILLIES. Yes, sir; that is right.

Mr. FORD. That is all, Mr. Chairman.

Mr. ALEXANDER (acting chairman). Gentlemen, the committee will now stand adjourned.

General GAILEY. Thank you, Mr. Chairman.

We appreciate your hospitality.

Mr. ALEXANDER. Thank you very much.

THURSDAY, JULY 3, 1958.

EXPORT-IMPORT BANK OF WASHINGTON

ADMINISTRATIVE EXPENSES

WITNESSES

SAMUEL C. WAUGH, PRESIDENT AND CHAIRMAN OF THE BOARD
LYNN U. STAMBAUGH, FIRST VICE PRESIDENT AND VICE CHAIRMAN
ARTHUR M. ANDERSON, TREASURER-BUDGET OFFICER
FRANK J. WALSH, CHIEF, ACCOUNTS DIVISION

LIMITATION ON ADMINISTRATIVE EXPENSES, EXPORT-IMPORT BANK OF WASHINGTON

Program and financing

	1957 actual	1958 estimate	1959 estimate
Program by activities: Administration (total obligations)	$1,642,345	$1,900,000	$2,055,000
Financing: Unobligated balance no longer available	27,655		
Limitation	1,670,000	1,900,000	2,055,000

Object classification

	1957 actual	1958 estimate	1959 estimate
Total number of permanent positions	202	209	234
Full-time equivalent of all other positions	1	1	1
Average number of all employees	185	200	221
Number of employees at end of year	185	205	227
Average GS grade and salary	8.9 $6,842	8.8 $6,947	8.8 $6,885
01 Personal services:			
Permanent positions	$1,341,201	$1,462,771	$1,599,000
Positions other than permanent	2,416	3,000	10,000
Other personal services	8,158	16,600	9,600
Excess of annual leave earned over leave taken	25,185	6,000	6,500
Total personal services	1,376,960	1,488,371	1,625,100
02 Travel	84,470	110,000	110,000
03 Transportation of things	1,596	1,500	2,000
04 Communication services	20,451	21,300	22,500
05 Rents and utility services	129,025	145,300	160,000
06 Printing and reproduction	13,171	16,700	18,900
07 Other contractual services	17,634	24,200	25,500
Services performed by other agencies	11,326	19,379	16,250
08 Supplies and materials	12,807	14,750	16,050
11 Grants, subsidies, and contributions		92,200	103,500
15 Taxes and assessments	274	300	300
Total administrative expenses	1,667,714	1,934,000	2,100,100
Less reimbursements from other accounts	25,369	34,000	45,100
Total obligations	1,642,345	1,900,000	2,055,000

Public Enterprise Funds

Program and financing

	1957 actual	1958 estimate	1959 estimate
Program by activities:			
Loan and guaranty program:			
Direct loan commitments:			
Development project loans	$439,615,674	$519,000,000	$496,000,000
Exporter loans	55,296,147	130,000,000	90,000,000
Commodity loans	69,896,860	194,000,000	130,000,000
Emergency foreign trade loans	500,000,000	60,000,000	----------
Guaranteed loan commitments:			
Development project loans	----------	4,000,000	26,000,000
Exporter loans	155,974	2,000,000	11,000,000
Commodity loans	2,353,200	4,000,000	13,000,000
Total, loan and guaranty program	1,067,317,795	913,000,000	766,000,000
Insurance	31,574,812	20,000,000	15,000,000
Administrative expenses:			
Subject to limitation	1,642,345	1,900,000	2,055,000
Other	34,728	48,000	46,000
Total, administrative expenses	1,677,073	1,948,000	2,101,000
Purchase of equipment	29,776	30,000	20,000
Interest on borrowings from Treasury	23,184,584	31,198,125	42,176,750
Total program (obligations)	1,123,784,040	966,176,125	825,297,750
Financing:			
Amounts becoming available:			
Collection of loans	265,052,835	300,713,738	395,470,175
Interest income from loans	85,407,768	95,453,125	109,424,750
Insurance premiums	32,945	20,000	16,000
Recovery of prior-year obligations	79,092,386	76,263,983	131,288,716
Total amounts becoming available	429,585,934	472,450,846	636,199,641
Unobligated balance brought forward (authorization to expend from public debt receipts)	2,039,776,425	1,323,078,319	806,853,040
Total amounts available	2,469,362,359	1,795,529,165	1,443,052,681
Capital transfers (payment of dividends to Treasury (−))	−22,500,000	−22,500,000	−22,500,000
Unobligated balance carried forward (authorization to expend from public debt receipts)	−1,323,078,319	−806,853,040	−595,254,931
Financing applied to program	1,123,784,040	966,176,125	825,297,750

Sources and application of funds (Operations)

	1957 actual	1958 estimate	1959 estimate
Gross expenditures (funds applied):			
Loan and guaranty program:			
Acquisition of loans	$230,985,117	$760,829,149	$516,000,000
Acquisition of equipment	29,776	30,000	20,000
Expense	24,849,267	33,138,125	44,271,750
Reimbursable expense	25,369	20,400	25,000
Insurance program: Expense	12,391	8,000	6,000
Increase in selected working capital	936,498	2,129,748	1,613,500
Total gross expenditures	256,838,418	796,155,422	561,926,250
Receipts from operations (funds provided):			
Loans and guaranty program:			
Loans repaid	265,052,835	300,713,738	395,470,175
Revenue	85,407,768	95,453,125	109,424,750
Reimbursment of expenses	25,369	20,400	25,000
Insurance program: revenue	32,945	20,000	16,000
Total receipts from operations	350,518,917	396,207,263	504,935,925
Budget expenditures	−93,680,499	399,948,159	57,000,325

Financial condition

Assets:			
Cash with Treasury and in banks	$43,704,224	$2,856,065	$1,355,740
Accounts receivable	24,551,893	26,793,466	28,456,966
Supplies	3,576	3,576	3,576
Loans receivable	2,577,710,830	3,037,826,241	3,158,356,066
Furniture and equipment, net	87,588	102,588	107,588
Total assets	2,646,058,111	3,067,581,936	3,188,279,936

Revenue, expense, and retained earnings

Loan and guaranty program:			
Revenue	$85,407,768	$95,453,125	$109,424,750
Expense	24,862,350	33,153,125	44,286,750
Net operating income, loan and guaranty program	60,545,418	62,300,000	65,138,000
Insurance program:			
Revenue	$32,945	$20,000	$16,000
Expense	12,391	8,000	6,000
Net operating income, insurance program	20,554	12,000	10,000
Net income for the year	60,565,972	62,312,000	65,148,000
Analysis of retained earnings:			
Retained earnings, beginning of year	427,352,123	465,418,095	505,230,095
Payment of dividends to Treasury (−)	−22,500,000	−22,500,000	−22,500,000
Retained earnings, end of year	465,418,095	505,230,095	547,878,095

	1957 actual	1958 estimate	1959 estimate
Liabilities: Current	$2,640,016	$2,751,841	$2,801,841
Government investment:			
Interest-bearing capital:			
Start of year	1,206,500,000	1,178,000,000	1,559,600,000
Borrowings from Treasury during year, net	−28,500,000	381,600,000	78,000,000
End of year	1,178,000,000	1,559,600,000	1,637,600,000
Non-interest-bearing capital: Capital stock	1,000,000,000	1,000,000,000	1,000,000,000
Retained earnings	465,418,095	505,230,095	547,878,095
Total Government investment	2,643,418,095	3,064,830,095	3,185,478,095

Status of certain fund balances

	1956 actual	1957 actual	1958 estimate	1959 estimate
Unexpended balance:				
Cash	$1,023,725	$43,704,224	$2,856,065	$1,355,740
Budget authorizations	2,793,500,000	2,822,000,000	2,440,400,000	2,362,400,000
Total unexpended balance	2,794,523,725	2,865,704,224	2,443,256,065	2,363,755,740
Obligated balance, net:				
Current liabilities	1,701,290	2,640,016	2,751,841	2,801,841
Undisbursed loan obligations	739,239,635	1,535,632,561	1,631,980,720	1,738,079,456
Unpaid undelivered orders		15,095	12,000	12,000
Unexpired war risk insurance		3,456,941	3,000,000	2,500,000
Guaranteed loans outstanding	36,486,621	25,433,185	25,451,930	53,564,478
Accounts receivable (−)	−22,680,246	−24,551,893	−26,793,466	−28,456,966
Total obligated balance	754,747,300	1,542,625,905	1,636,403,025	1,768,500,809
Unobligated balance	2,039,776,425	1,323,078,319	806,853,040	595,254,931

Liquidation of Certain Reconstruction Finance Corporation Assets

Program and financing

	1957 actual	1958 estimate	1959 estimate
Program by activities:			
Expense	$199	$200	$200
Interest on borrowings	557,666	438,717	316,379
Total program (costs—obligations)	557,865	438,917	316,579
Financing:			
Amounts becoming available: Receipts from operations:			
Collection of loans	6,142,686	6,028,334	6,006,232
Interest income from loans	716,667	561,576	413,372
Sale of investments	----------	1,250,001	----------
Total amounts becoming available	6,859,353	7,839,911	6,419,604
Unobligated balance brought forward (authorization to expend from public debt receipts)	88,018	78,364	58,929
Total amounts available	6,947,371	7,918,275	6,478,533
Repayment of borrowings from Treasury (−)	−6,165,837	−6,132,384	−6,110,021
Capital transfers:			
Repayment of investment to Treasury (−)	−142,686	−1,278,335	−6,232
Payment of profits to Treasury (−)	−2,619	−9,710	−733
Unobligated balance carried forward (authorization to expend from public debt receipts)	−78,364	−58,929	−44,968
Financing applied to program	557,865	438,917	316,579

Sources and application of funds (operations)

	1957 actual	1958 estimate	1959 estimate
Gross expenditures (funds applied): Expense	$557,865	$438,917	$316,579
Receipts from operations (funds provided):			
Loans repaid	6,142,686	6,028,334	6,006,232
Revenue	716,667	561,576	413,372
Proceeds from sale of investments	----------	1,250,001	----------
Decrease in selected working capital	9,654	19,435	13,961
Total receipts from operations	6,869,007	7,859,346	6,433,565
Budget expenditures	−6,311,142	−7,420,429	−6,116,986

Revenue, expense, and retained earnings

	1957 actual	1958 estimate	1959 estimate
Revenue	$716,667	$561,576	$413,372
Expense	557,865	438,917	316,579
Net income for the year	158,802	122,659	96,793
Analysis of retained earnings:			
Retained earnings, beginning of year	386,621	542,804	655,753
Payment of profits to Treasury (−)	−2,619	−9,710	−733
Retained earnings, end of year	542,804	655,753	751,813

Liquidation of Certain Reconstruction Finance Corporation Assets—Continued

Financial condition

	1957 estimate	1958 estimate	1959 estimate
Assets:			
Accounts receivable	$343,838	$262,747	$187,685
Loans receivable	27,053,258	21,024,924	15,018,692
Investments, net	1,250,001		
Total assets	28,647,097	21,287,671	15,206,377
Liabilities: Current	265,474	203,818	142,717
Government investment:			
Interest-bearing capital:			
Start of year	32,701,397	26,535,560	20,403,176
Repayments to Treasury during year (−)	−6,165,837	−6,132,384	−6,110,021
End of year	26,535,560	20,403,176	14,293,155
Non-interest-bearing capital:			
Start of year	1,445,945	1,303,259	24,924
Repayment of capital to Treasury (−)	−142,686	−1,278,335	−6,232
End of year	1,303,259	24,924	18,692
Retained earnings	542,804	655,753	751,813
Total Government investment	28,381,623	21,083,853	15,063,660

Status of certain fund balances

	1956 actual	1957 actual	1958 estimate	1959 estimate
Unexpended balance				
Obligated balance, net:				
Current liabilities	$331,320	$265,474	$203,818	$142,717
Accounts receivable (−)	−419,338	−343,838	−262,747	−187,685
Total obligated balance	−88,018	−78,364	−58,929	−44,968
Unobligated balance	88,018	78,364	58,929	44,968

Object classification

		1957 actual	1958 estimate	1959 estimate
01	Personal services (positions other than permanent)	$199	$200	$200
14	Interest	557,666	438,717	316,379
	Total obligations	557,865	438,917	316,579

Informational Foreign Currency Schedule

Private enterprise loans from foreign currencies

PROGRAM AND FINANCING

	1957 actual	1958 estimate	1959 estimate
Program by activities:			
1. Loans		$15,750,000	$52,290,000
2. Operating expense			200,000
Total program obligations		15,750,000	52,490,000
Financing:			
Unobligated balance brought forward			−52,490,000
Unobligated balance carried forward		52,490,000	
Authorization to expend foreign currency receipts pursuant to 71 Stat. 345		68,240,000	

Private enterprise loans from foreign currencies—Continued

OPERATING EXPENSES—FOREIGN CURRENCIES

	1957 estimate	1958 estimate	1959 estimate
01 Personal services (contract or fee basis)			$175,000
02 Travel			15,000
04 Communication services			5,000
06 Printing and reproduction			5,000
Total operating expenses			200,000

ANALYSIS OF EXPENDITURES

Obligated balance brought forward			$14,250,000
Obligations incurred		$15,750,000	52,490,000
Obligated balance carried forward		−14,250,000	−56,740,000
Total expenditures		1,500,000	10,000,000

INTRAGOVERNMENTAL FUNDS—ADVANCES AND REIMBURSEMENTS

Program and financing

	1957 actual	1958 estimate	1959 estimate
Program by activities: Loans and guaranty management for other agencies (total obligations)	$25,369	$34,000	$45,100
Financing: Advances and reimbursements from other accounts	25,369	34,000	45,100

Object classification

	1957 actual	1958 estimate	1959 estimate
Average number of all employees	3	4	5
Average employees at end of year	3	4	5
Average GS grade and salary	8.9 $6,842	8.8 $6,947	8.8 $6,885
01 Personal services (permanent positions)	$23,109	$29,500	$39,450
02 Travel	15		
04 Communication services	53	50	50
05 Rents and utility services	1,498	2,000	2,530
06 Printing and reproduction	654	800	800
07 Other contractual services	40		
11 Grants, subsidies, and contributions		1,650	2,270
Total obligations	25,369	34,000	45,100

Mr. ROONEY. The committee will please come to order.

This morning the request with regard to the Export-Import Bank of Washington shall be considered.

The request is for a limitation in the amount of $2,055,000 for fiscal year 1959. This compares with the limitation of $1,900,000 for fiscal 1958 and $1,670,000 for fiscal 1957.

We are pleased to have with us the President and Chairman of the Board of Directors, the Honorable Samuel C. Waugh—of Nebraska, is it?

Mr. WAUGH. Yes, Lincoln, Nebr.

Mr. ROONEY.——who has a general statement to submit to the committee at this time.

Would you please proceed, Mr. Waugh.

Mr. WAUGH. Thank you, Mr. Chairman.

We also have Mr. Lynn U. Stambaugh, First Vice President and Vice Chairman; Mr. Arthur M. Anderson, Treasurer and Budget Officer; and Mr. Frank J. Walsh, the Chief of our Accounts Division.

I have a very brief statement which I would like to read.

JUSTIFICATION MATERIAL

Mr. ROONEY. It might be well before you proceed, and for the purpose of the record, if we inserted at this time pages 1 and 2 of the justifications.

(The material referred to follows:)

THE EXPORT-IMPORT BANK OF WASHINGTON

SCOPE OF OPERATIONS

The Export-Import Bank of Washington was originally created in 1934 by Executive Order 6581. After several modifications and revisions, the organization of the Export-Import Bank of Washington was recast as an independent Federal agency by the Export-Import Bank Act of 1945. The act has been amended from time to time since 1945. Section 4 of the act now provides that the bank shall have a capital of $1 billion, subscribed by the United States, section 6 of the act authorizes borrowings to the amount of $4 billion from the Treasury, and section 7 limits to $5 billion the amount that the bank shall have outstanding at any one time on loans, guaranties, and insurance. Pursuant to Public Law 85–55, 85th Congress, approved June 17, 1957, the period within which the bank may make loans was extended from June 30, 1958, to June 30, 1963.

The objectives and purposes of the Export-Import Bank are to aid in financing and to facilitate exports and imports and the exchange of commodities between the United States or any of its Territories or insular possessions and any foreign country or the agencies or nationals thereof.

The Congress has laid down the policy that the bank should supplement and encourage private capital, not compete with it. The Congress requires that the bank's loans have reasonable assurance of repayment. The bank does not make grants.

As a general rule, the bank extends credit to finance only the purchase and exportation of materials or equipment produced or manufactured in the United States and the financing of associated technical services of United States firms or individuals.

Having broad powers under its charter to carry out its purposes, the bank currently makes available direct financing, guaranties, and insurance. Direct financing takes the form of purchases, without recourse, from a United States exporter of notes or acceptances issued to him by a foreign importer; loans to a United States or foreign private entity or foreign government; or purchases from a United States importer of his obligations. Guaranties may run directly to exporters or importers or may be effected by a purchase by a financial institution of obligations, from an exporter or importer, with the backing of a guaranty agreement with the Export-Import Bank. These guaranties may cover all risks of repayment or be limited to dollar transfer or other specified risks.

The bank also makes available insurance against war risk and expropriation covering the United States exporter's interest in tangible personal property of United States origin held abroad on consignment.

In addition to its own loans, the bank also administers loans and guaranties for the International Cooperation Administration, defense production loans for the Office of Defense Mobilization, the liquidation of certain foreign loans and assets turned over by the Reconstruction Finance Corporation, and the collections of payments as due on the $1 billion agreement between the United States and the Federal Republic of Germany for postwar economic assistance, also in accordance with the direction of the Congress the bank is prepared to administer the development loan fund credits in the same manner that the ICA credits are being serviced. An additional activity was recently assumed under the so-called Cooley amendment, Public Law 85–128, 85th Congress, approved Au-

gust 13, 1957, to the Agricultural Trade Development and Assistance Act. Under that program the bank makes certain types of loans to American and foreign private business firms out of foreign currencies received from the sale of agricultural surpluses.

ADMINISTRATIVE EXPENSE BUDGET FOR 1959

The bank's estimate of administrative expense requirements for the fiscal year ending June 30, 1959, totals $2,055,000. This is the amount of the limitation requested of the Congress on the use of the bank's own funds derived from its earnings to cover the cost of administering its lending, guaranty, and insurance programs. The figures making up the total of $2,055,000 were compiled subject to the expressed policy of the President of the United States and the Budget Bureau to effect national economies, and after canvassing the offices and divisions of the bank for a conservative forecast of their requirements in operating at the level of lending activities that is anticipated for 1959.

Accounting for the increase of $155,000 over the limitation of $1,900,000 on administrative expenses authorized by the Congress for 1958 are the following items: The addition of 9 technical and 16 stenographic and clerical positions to the bank's staff at a cost of $136,729; additional rental of quarters of $14,700; increase in the payment for the United States Government's share to the civil service retirement fund of $11,300; and minor increases of $3,371; less a greater total of reimbursements by $11,100 expected from other agencies in 1959 over the amount received for work done by the bank in 1958.

Of the total increase of $155,000, $55,000 is applicable to the workload in connection with the foreign currency credits to be established and administered by the Export-Import Bank in accordance with the Cooley amendment to Public Law 480. A limitation of the equivalent of $200,000 in foreign currencies available to the bank is also requested of the Congress by the bank for expenses incurred in foreign countries incident to such loans.

The principal feature of the workload necessitating the increased budget for 1959 is the steady rise in the number of credits in which participations are taken by suppliers, commercial banks, and insurance companies, which adds to the complexity of the transactions and to the volume of workload, affecting all the offices and divisions of the bank, both operating and administrative.

The high level of lending operations is indicated by the estimate of new credits to be authorized in 1959, consisting of 191 exporter credits for a total of $101 million, 97 development credits for $522 million, and 8 commodity credits for $143 million. The aggregate of these 296 new credits is $766 million.

The bank's estimated expenditures for 1959 will total $561.9 million, made up of the following expenditures: Loan disbursements, $516 million; operating expenses, $44.3 million; purchase of equipment and increase in working capital assets, $1.6 million.

Total receipts it is anticipated will amount to $504.9 million, consisting of estimated loan principal repayments of $395.5 million and interest income on loans of $109.4 million.

The difference between the total expenditures and the total receipts referred to above is $57 million, which is the bank's estimated net expenditure included in the United States Government budget for 1959.

Mr. Rooney. Would you please proceed, Mr. Waugh.

General Statement

Mr. Waugh. The Export-Import Bank of Washington submits to the Congress its request for the authority to pay out of the bank's estimated earnings of $109.4 million in fiscal year 1959 the amount of $2,055,000 for administrative expenses.

The estimated expense for the coming year is 1.878 percent of the estimated earnings.

The bank will pay out of its earnings interest estimated at $42.2 million to the United States Treasury upon its borrowings. This will result in an estimated $65.1 million net profit after the payment of all operating expense and interest. Out of these net profits the bank

expects to pay to the United States Treasury a dividend of $22.5 million upon its capital stock. The balance of estimated earnings totaling $42.6 million will be placed in reserve for contingencies, increasing the undivided profits so reserved to $547.9 million at the end of fiscal year 1959.

The budget provides for an increase of $75,000 in the administrative expense of $2,055,000 for fiscal year 1959 over the fiscal year 1958 budget of $1,980,000 submitted this past year.

We were informed that before making final approval the Congress reduced the budget submitted by $80,000 due to the fact that practically 2 months had passed in the fiscal year before final approval was given.

The requested increase of $75,000 over the budget submitted a year ago covers $55,000 authorized for administrative expense incident to the administration of the loans under the Cooley amendment to the Agricultural Trade and Assistance Act. This is a new activity on the part of the Export-Import Bank which was given to us by the Congress a year ago. The additional amount of $20,000 plus the aforesaid reduction of $80,000 requested last year provides for increasing the bank's personnel with 9 technicans and 16 stenographic and clerical employees, and for the acquisition of additional space in the Lafayette Building for which the bank pays rental to the General Services Administration.

Submitted with this request is a report to the Congress on the bank's budget estimates for fiscal year 1959. This report presents in detail data including anticipated workload in support of the bank's estimated expense budget for fiscal year 1959, together with statistics, charts, and graphs pertaining to the bank's actual lending operations for the year ended December 31, 1957, and cumulative. There are also submitted herewith statements showing comparison of the bank's operations by percentages and disposition of the bank's gross income.

The level of lending operations for fiscal year 1959 is reflected by the new credits estimated, which are made up of 191 exporter credits amounting to $101 million, 97 development credits of $522 million, and 8 commodity credits of $143 million, giving an aggregate total credits of $766 million. These estimates, however, were made prior to and did not take into consideration the increase of $2 billion in lending authority approved by the Congress in May 1958, which will probably result in a substantial increase in the bank's authorized credits for 1959.

The bank is also requesting authority in 1959 to spend up to the equivalent of $200,000 of foreign currencies obtained by the bank as a result of the Cooley amendment for expenses incurred in foreign countries incident to the making of the loans contemplated by such legislation.

May I say here that the $200,000 of foreign currencies are for the most part nonconvertible currencies. In other words, we are not asking for $200,000; we are asking for up to that portion of the foreign currencies which we receive under the Cooley amendment to use in connection with the expenses we may incur in foreign lands.

The bank's approved budget for fiscal year 1958 authorized the employment of consultants at a rate not to exceed $50 per diem. Experience has shown this amount insufficient for the purpose of engaging

qualified consulting enginers who are specialists in their respective fields. The bank is, therefore, requesting that the maximum daily rate be increased from $50 to $100.

The policy of the Board of Directors of the bank is to make certain that insofar as possible the proceeds of its loans are spent in the United States for capital equipment and commodities for export, and technical services. In this way—since the bank's dollars never leave this country—the bank is assisting in promoting a sound economy at home. At the same time the bank's activities, through its loans, assist the economies of friendly nations, including the less developed countries in their efforts to be stronger, independent members of the free world.

It is the continued desire of the bank's management to carry out the mandates of the President and the Congress. Over the bank's 24-year history the staff and personnel has acquired a high degree of professional skill in the international lending field.

It is the considered judgment of the Board of Directors of the bank that the amount of $2,055,000 requested for the limitation on administrative expenses of the bank for fiscal year 1959 is a minimum figure with which to conduct its operations efficiently and constructively.

RESUMÉ OF OPERATIONS FOR PAST YEAR

Gentlemen, we closed our books a few days ago, so we have made for you a 1-page resumé of what has happened this past calendar year which I would like to read.

Mr. ROONEY. Very well, you may do so.

Mr. WAUGH. The administrative responsibility of the Export-Import Bank of Washington as to loans, investment guaranties and insurance programs increased approximately 11.5 percent during the fiscal year 1958 over 1957, reaching a total direct and agency responsibility of $8,387.2 million of United States Government funds.

COMPARISON FISCAL YEAR 1957 VERSUS 11 MONTHS FISCAL YEAR 1958

Export-Import Bank lending program:

1. In fiscal year 1957 the bank authorized 206 loans and allocations for $725.2 million (exclusive of the $500 million United Kingdom loan). In the full fiscal year 1958 the bank authorized 302 loans and allocations for $901.5 million, an increase of 46.6 percent in number and 24.3 percent in amount. (It will be appreciated that the number of applications and inquiries for loans received and considered by the bank are at least several times the number of loans authorized.)

2. Loans outstanding increased 29.7 percent from 711 to 922.

3. Undisbursed authorizations and outstanding loans increased 9.3 percent from $4,139 million to $4,524 million.

Export-Import Bank's other responsibilities: Now you know that the Export-Import Bank operates in an agency capacity for other agencies of Government.

Export-Import Bank war risk and expropriation insurance coverage has increased 109 percent from $36.1 million to $75.5 million.

The number of insurance policies issued, cumulative, increased 118 percent from 935 to 2,039.

Export-Import Bank as agent for ICA: Undisbursed authorizations and outstanding loans increased 17.9 percent from $3,071 million to $3,619.9 million.

Export-Import Bank investment guaranties: The total amount of contracts in force has increased 29.4 percent from $117.8 million to $152.4 million. The number of contracts issued increased 21.1 percent from 175 to 212.

Loans under Public Law 480, Cooley amendment: This is a new operation for the bank. $87.2 million, United States dollar value of currencies of 17 foreign governments is available for loans—145 applications have been received.

PERSONNEL

The average number of employees in fiscal year 1958 was 200. The projected average number of employees for fiscal year 1959 is 220; an increase of 10 percent.

LIMITATION ON ADMINISTRATIVE EXPENSES

In fiscal year 1958 the bank requested, with the approval of the Bureau of the Budget, $1,980,000; the Congress allowed $1,900,000.

In fiscal year 1959 the bank requests, with the approval of the Bureau of the Budget, $2,055,000; or an increase of 3.8 percent over the request of the past year.

Gentlemen, when we appeared before the House Banking and Currency Committee several weeks ago we prepared a number of charts which show the operation of the bank.

We have four of the more interesting charts here. Would you like to take about 2 minutes to look at them? The charts were not prepared for this committee but were prepared at the suggestion and with the approval of the House Banking and Currency Committee.

Mr. ROONEY. We shall be pleased to do so.

Mr. WAUGH. These charts may provoke some questions. This first chart indicates where the bank's loans have been made over the past 24 years—Latin America, Europe, Africa, Asia, and Oceania. This gives the number of loans in each country. This shaded portion indicates the area of China where loans were made before it went behind the Iron Curtain—when Chiang was on the mainland. This is the area that is now behind the Iron Curtain.

LOAN TO MEXICO FOR PURCHASE OF CATTLE

We have another chart which I think is most interesting. We made a $5 million loan to Mexico to buy cattle in the United States during the drought era. This was authorized in November 1956 when cattle prices were down. The minute we authorized the loan, the cattle market beef and dairy cattle were purchased to go to Mexico. This indicates the spread you get as territory is concerned on one loan. Both beef and dairy cattle were purchased.

Mr. ROONEY. What was the total amount of purchases at that time? The loan was $5 million, but what was the total purchased by the Mexicans?

Mr. WAUGH. We have been informed approximately $1.5 million of their money was spent in excess of what we loaned them.

Incidentally, we have an additional $5 million loan, also to Mexico—recently authorized and they expect to do the buying in the next few months after their dry season is over.

Mr. FORD. Has that loan proved out as a good business proposition?

Mr. WAUGH. Yes. They are delighted and our cattle people are too. We have a number of letters from cattle people along the border and from cattlemen's associations. When I was in Mexico for the Bankers' Association meeting I called on their Department of Agriculture which has been handling this loan. We made the loan to the Mexican Government and they reloaned to their farmers, and they expressed their pleasure. In fact, they spoke of their new $5 million credit and we all thought it was a fine piece of business for the reason that it helps the Mexican small farmer improve his herd. They are deficient, as you know, in both beef and dairy products and in addition it has helped relations between the two countries. We think it has been a very fine loan from the standpoint of developing friendly relations between the cattlemen of Mexico and our own country.

Mr. FORD. Has it paid off and is it in good shape from a financial point of view?

Mr. WAUGH. Yes. It is a 4-year loan. Payments are to be made at the end of the first year. We charge 5 percent with the guaranty of National Financiera and they in turn charge their farmers a slightly higher rate.

TYPICAL LOAN FOR PURCHASE OF AIRCRAFT

This chart was made to indicate what happens to an order for one single airplane. An order for one airplane placed on the west coast cost $2 million. The company that received this order has made a detailed study from their books and found they received $684,000 out of the $2 million. They had major subcontractors which received $516,000. They had small suppliers—using the criterion small business gives of under 500 employees—small business received $589,000. So when you place an order for a single airplane on the west coast it brings orders to 2,000 United States firms in 38 States.

Mr. ROONEY. You would not want to give the impression that every time you lend $2 million it affects the economy of 38 States?

Mr. WAUGH. Every time we lend $2 million to buy 1 airplane it affects the economy of 38 States.

Mr. ROONEY. That may be true with regard to one airplane and the typical airplane loan that you are referring to, but that chart would convey an impression which is not warranted.

Mr. WAUGH. We should also say the airplane credits, too.

Mr. ROONEY. All right. I do not want to be misled.

Mr. WAUGH. We do not want to mislead you.

HISTORY OF EXPORT-IMPORT BANK'S OPERATIONS

This fourth chart I think is the most interesting chart we have in our bank. This shows the Export-Import Bank's financial operations for the whole 24 years' history up to December 31, 1957.

The Bank's gross income during that period of time was $867 million. After the bank pays interest to the Treasury and pays dividends to the Treasury—we have paid $202 million in interest and $173 million in dividends—there remains in our reserve account—these are reserves for bad loans or anything that may happen—$475 million.

Our administrative expense, which is taken out of our earnings over the whole period of 24 years, figures 1.7 percent of income.

And the losses we have had up to this year figure this amount, $396,000.

I hasten to add we have had a loss this 6 months which will be substantially in excess of the amount which will show up in our figure for June 30. But this year, after paying all operating expenses, after paying the Treasury all interest on borrowed money, after paying the one loss which has been brewing for 6 years, we will still have $65 million of earnings or reserves out of which we will pay $22.5 million to the Treasury and the balance will be added to the reserve account.

Mr. ROONEY. What is the loss to which you have referred?

Mr. WAUGH. May I go off the record?

Mr. ROONEY. I think that is a reasonable request.

(Discussion off the record.)

Mr. WAUGH. We think when you take into consideration the bank has actually paid out over $6 billion in loans, half of which have already been repaid, and have outstanding an additional $1.5 billion authorizations, the loss ratio for the bank is low.

Mr. FORD. Mr. Chairman, may I ask a question?

Mr. ROONEY. Yes, Mr. Ford.

Mr. FORD. What is your current relationship with the Treasury? What is your net balance so far as the Treasury is concerned?

Mr. WAUGH. Our borrowings from the Treasury today are $1,540,000,000. We have oustanding in loans and in firm authorizations today—these are round figures—$4.5 billion. This total is made up from $1 billion capital stock upon which we pay $22.5 million dividens; $1.5 billion Treasury borrowings; $500 million earnings; and $1.5 billion which we have authorized and firmly committed.

Here are the four figures: $1.5 billion borrowings; $1 billion capital; $500 million earnings; and $1.5 billion commitments which have not been disbursed as yet.

Mr. FORD. Will the last figure of $1.5 billion be drawn from the Treasury in the near future?

Mr. WAUGH. The commitments we have made and which have not been paid out are a result of the orders placed in this country which take a number of years to build. For example, an order for a jet airplane takes 2 or 3 years. Our loan to Southern Peru Copper will be disbursed over 3 or 4 years. But they are firm commitments. Where we make a commitment we set aside that amount of money in our statement.

LOANS TO FINANCE AIRCRAFT AND SPARE PARTS

Mr. ROONEY. Can you give the total amount of your loans for airplanes purchased or to be purchased in the United States?

Mr. WAUGH. I cannot give it offhand, but it is over $100 million. I can get that figure for you.

Mr. ROONEY. Please submit that for the record.

(The information follows:)

During the life of the bank 31 credits in the aggregate amount of $180,391,434 have been authorized to finance aircraft and spare parts.

DISPOSITION OF GROSS INCOME AND STATEMENT OF CREDITS AUTHORIZED

Mr. ROONEY. It might be will if we inserted this chart with regard to disposition of gross income, fiscal years 1934 through 1958, together with the statement of credits authorized January 1 to June 30, 1958, and recapitulation for period July 1, 1957, to June 30, 1958.

This, you feel, would bring up to date the matter requested by Mr. Gary at last year's hearinngs?

Mr. WAUGH. Yes, sir.

(The material referred to follows:)

Disposition of gross income, fiscal years 1934 through 1958

Fiscal year	Gross income	Interest paid to U. S. Treasury	Operating expenses	Losses	Net income after losses	Dividends	Net addition to reserve	Reserve for contingencies at close of fiscal year
1934	$6,684.20		$2,499.92		$4,184.28		$4,184.28	$4,184.28
1935	11,986.35		23,529.56		−11,543.21		−11,543.21	−7,368.93
1936	288,423.83		118,146.93		170,276.90	(1)	170,276.90	162,917.97
1937	849,203.96		51,801.53		797,402.43		797,402.43	960,320.40
1938	934,855.68		49,181.87		885,673.81	$1,206,164.38	−320,490.57	639,829.83
1939	2,007,630.88		56,736.28		1,950,894.60	1,056,164.37	894,730.23	1,534,560.06
1940	3,078,175.76		74,989.67		3,003,186.09		3,003,186.09	4,537,746.15
1941	5,349,033.48		237,409.51		5,111,623.97		5,111,623.97	9,649,370.12
1942	7,860,165.61		188,586.01		7,671,579.60		7,671,579.60	17,320,949.72
1943	7,864,713.05		229,632.99		7,635,080.06		7,635,080.06	24,956,029.78
1944	7,814,510.37		311,599.77		7,502,910.60	10,812,849.29	−3,309,938.69	21,646,091.09
1945	8,316,672.49		292,304.36	$1,217.04	8,023,151.09	5,220,000.00	2,803,151.09	24,449,242.18
Cumulative to June 30, 1945	44,382,055.66		1,636,418.40	1,217.04	42,744,420.22	18,295,178.04	24,449,242.18	
1946	10,739,893.14		558,594.20	146,472.15	10,034,826.79	2,610,000.00	7,424,826.79	31,874,068.97
1947	32,308,474.56	$1,300,471.24	726,765.27	126,425.94	30,154,812.11		30,154,812.11	62,028,881.08
1948	54,418,853.77	8,742,834.34	753,091.50	−8,246.25	44,931,174.18		44,931,174.18	106,960,055.26
1949	60,885,251.87	12,194,818.96	1,025,403.55	−9,546.03	47,674,575.39	(2)	47,674,575.39	154,634,630.65
1950	61,888,294.93	12,577,801.42	883,954.53	−21,094.16	48,447,633.14		48,447,633.14	203,082,263.79
1951	66,293,458.35	13,650,164.11	932,518.66	−7,834.13	51,718,609.71	20,000,000.00	31,718,609.71	234,800,873.50
1952	70,088,517.68	17,256,003.09	1,026,344.37	−1,315.29	51,807,485.51	20,000,000.00	31,807,485.51	266,608,359.01
1953	75,800,063.10	22,975,083.94	1,060,076.77	272,560.08	51,492,342.31	22,500,000.00	28,992,342.31	295,600,701.32
1954	86,605,127.04	28,144,443.68	1,058,225.71	−2,571.00	57,405,028.65	22,500,000.00	34,905,028.65	330,505,729.97
1955	85,763,769.25	25,523,229.30	1,150,105.80		59,090,434.15	22,500,000.00	36,590,434.15	367,096,164.12
1956	85,514,008.64	23,899,687.93	1,457,938.77	29,485.55	60,126,896.39	22,500,000.00	37,626,896.39	404,723,060.51
1957	85,440,712.49	23,184,584.44	1,690,156.22	−1,082.39	60,567,054.22	22,500,000.00	38,067,054.22	442,790,114.73
Estimated, 1958	100,000,000.00	30,000,000.00	2,025,000.00	2,500,000.00	65,475,000.00	22,500,000.00	42,975,000.00	485,765,114.73
Cumulative to June 30, 1958	920,128,480.48	219,449,122.45	15,984,593.75	3,024,471.51	681,670,292.77	195,905,178.04	485,765,114.73	
To transfer balance in reserve for loans in default to surplus—reserved for contingencies				−127,980.19	+127,980.19		+127,980.19	+127,980.19
Total				2,896,491.32	681,798,272.96		485,893,094.92	485,893,094.92

[1] Reconstruction Finance Corporation.

[2] Treasury Department.

Credits authorized Jan. 1 to June 30, 1958, and recapitulation for period July 1, 1957, to June 30, 1958

Country and obligor	Credit No.	Purpose (name of supplier in parentheses)	Credit authorized		Interest (percent)	Repayment terms
			Date	Amount		
AFRICA						
ETHIOPIA						
(1) Imperial Ethiopian Government	742	Aircraft and aviation facilities	Jan. 9, 1958	[1] $700,000	5	40; semiannually, beginning Dec. 1, 1957.
ASIA						
INDIA						
(1) The President of India	992	Capital equipment for development programs.	Feb. 27, 1958	150,000,000	5¼	20; semiannually, beginning Jan. 15, 1964.
IRAN						
(2) Diesel White Co., Ltd	663–5	Diesel engines for trucks (Cummins Engine Co., Inc.).	Apr. 3, 1958	68,000		
(2) The Millard Co., Ltd	747–10	Motortrucks, trailers, etc. (Mack Trucks, Inc.).	June 27, 1958	[2] 600,000		
ISRAEL						
(1) State of Israel	987	Expansion of water supply, distribution facilities and agricultural development.	Feb. 20, 1958	24,200,000	5¼	24; semiannually, beginning June 15, 1961.
JAPAN						
(1) Tokyo Kohan Co., Ltd	1012	Equipment for steel mill	May 29, 1958	7,190,000	5¼	20; semiannually, beginning Aug. 15, 1960.
PHILIPPINES						
(2) Custombuilt Manufacturing Corp	886–2	Concrete block plant (Besser Co.)	Feb. 7, 1958	60,000		
Total Asia				182,028,000		
EUROPE						
AUSTRIA						
(1) Creditanstalt-Bankverein, Oesterreichische Laenderbank A. G., and Oesterreichische Credit-Institut, A. G.	986	Raw cotton	Feb. 20, 1958	12,000,000	4	Drafts at 15 months.

See footnotes at end of table, p. 702.

Credits authorized Jan. 1 to June 30, 1958, and recapitulation for period July 1, 1957, to June 30, 1958—Continued

Country and obligor	Credit No.	Purpose (name of supplier in parentheses)	Credit authorized		Interest (percent)	Repayment terms
			Date	Amount		
DENMARK						
(2) A/S Georg E. Mathiasen	744-9	Steam generators, water heaters, etc. (Clayton Manufacturing Co.).	Jan. 23, 1958	[3] $30,000		
ITALY						
(1) Istituto Mobiliare Italiano	991	Machinery and equipment for small Italian firms.	Feb. 27, 1958	5,000,000	5½	12; quarterly, beginning 2 years after date of note.
(1) Do	999	Machinery, equipment, and services for improvement of steel mill facilities.	Mar. 27, 1958	7,000,000	5¼	16; semiannually, beginning June 1, 1960.
SPAIN						
(1) Fabrica de Mieres, S. A	1000	Expansion of steel-mill facilities	Apr. 1, 1958	6,800,000	5¼	20; semiannually, beginning Mar. 31, 1961.
(1) Iberduero, S. A	1017	Power generating equipment	June 12, 1958	8,900,000	5¼	30; semiannually, beginning May 1, 1963.
(1) Empresa Nacional de Electricidad (ENESA).	1018	do	do	15,650,000	5¼	Do.
Total Europe				55,380,000		
LATIN AMERICA						
BRAZIL						
(2) Sociedade Tecnica de Materiais, "SOTEMA", S. A.	974	Diesel cane tractors with attachments (Thomson Machinery Co., Inc.).	Jan. 9, 1958	33,600		
(2) Do	961-2	Diesel tractors, dozers, and attachments (Allis-Chalmers Manufacturing Co.).	Jan. 30, 1958	136,000		
(2) Willys-Overland do Brasil, S. A	977	Auto and truck parts plant	Jan. 10, 1958	[4] 1,081,000		
(2) Cia. Brasileira de Materiais	978	Agricultural equipment (Thomson Machinery Co., Inc.).	Jan. 30, 1958	33,500		
(1) Walita Auto-Pecas, S. A	979	Equipment to manufacture generators and starter motors.	do	1,200,000	5¾	10, semiannually beginning June 15, 1960.
(2) Cia. Nordeste de Automoveis "Cinorte"	961-3	Tractors and accessories (Allis-Chalmers Manufacturing Co.).	Jan. 31, 1958	20,000		
(2) Do	961-5	Tractors and dozers (Allis-Chalmers Manufacturing Co.).	Apr. 24, 1958	19,500		
(2) Soc. Importadora de Tratores e Motores, Ltda,	981	Tractors, disk harrows, and grain drills (R. H. Sheppard Co., Inc.).	Feb. 7, 1958	156,000		

(2) Cia. Nordeste de Automoveis	982	Tractor and cultivator (Thomson Machinery Co., Inc.).	Feb. 13, 1958	3,400			
(2) Sabrico S. A. Brasileira de Intercambio Comercial.	983	Tractor-mounted disk plows (James S. Oppenheimer).	do	15,000			
(2) Celso Nunes, S. A	984	Tractor (Thomson Machinery Co., Inc.)	Feb. 20, 1958	2,500			
(2) Do	961-10	Tractor and bulldozer (Allis-Chalmers Manufacturing Co.).	May 8, 1958	6,000			
(2) Agromotoi—Distribuidora de Motores para Transporte e Agricultura, S. A.	985	Rotary cutters and plows (James S. Oppenheimer).	Feb. 20, 1958	12,500			
(2) Cia. Fabio Bastos, Comercio e Industria	989	Post-hole diggers, terracer blades, and rotary cutters (James S. Oppenheimer).	Feb. 27, 1958	21,000			
(2) Do	996	Agricultural implements (Brillion Iron Works).	Mar. 11, 1958	30,000			
(2) Cia. Brasileira de Maquinaria	990	Diesel cane tractors (Thomson Machinery Co., Inc.).	Feb. 27, 1958	35,400			
(2) Panobra S. A. Comercio e Industria	993	Harrows, farm sprayers, rotary cutters, and terracers (James S. Oppenheimer).	Mar. 4, 1958	27,000			
(2) Euluz, S. A	737-21	Diesel tractors and attachments (Caterpillar Tractor Co.).	Mar. 11, 1958	19,500			
(2) Cia. Brasileira de Materiais "Cobraco"	961-4	Tractors and angledozers (Allis-Chalmers Manufacturing Co.).	do	74,000			
(2) Do	1003	Tractors, cultivators, and attachments (Thomson Machinery Co., Inc.).	Apr. 24, 1958	32,500			
(2) Cia. Brasileira de Materiais "Cobraco"	961-8	Tractors, angledozers, and plowing harrows (Allis-Chalmers Manufacturing Co.).	do	74,500			
(2) Prefeitura Municipal do Recife	1004	Trolley buses and spare parts (Marmon-Herrington Co., Inc.).	do	1,182,500			
(2) Prefeitura Municipal de Belo Horizonte	1005	do	do	910,500			
(1) Tratores do Brasil, S. A	1006	Tools for manufacture of earth-moving equipment.	do	450,000	5½	8; semiannually, beginning Oct. 15, 1959.	
(2) Importadora de Maquinas Agricolas e Rodoviarias Ltda. "Imar."	961-6	Harvesters, tractors, and winches (Allis-Chalmers Manufacturing Co.).	do	63,000			
(2) Cia. Brasileira de Maquinaria "Cobrama"	961-7	Tractors, bulldozers, and plowing harrows (Allis-Chalmers Manufacturing Co.).	do	66,000			
(2) Ministerio da Viacao e Obras Publicas, Departamento Nacional de Estradas de Rodagem.	580-12	Motor graders (LeTourneau-Westinghouse Co.).	May 8, 1958	178,000			
(2) Do	637-7	Motor graders and attachments (Baldwin-Lima-Hamilton Corp.).	do	307,000			
(2) Do	737-24	Motor graders and tractors (Caterpillar Tractor Co.).	do	420,000			
(2) Do	1015	Motor graders and attachments (Pettibone New York Corp.).	June 10, 1958	78,000			
(2) Departamento de Estradas de Rodagem do Estado de Sao Paulo.	583-5	Asphalt pavers and attachments (Barber-Grecne Co.).	May 8, 1958	42,000			
(2) Do	612-1	Road rollers and attachments (Huber-Warco Co.).	do	43,000			
(2) Do	1011	Asphalt mixers (McConnaughay Mixers, Inc.).	May 29, 1958	54,000			
(2) Do	737-31	Graders, traxcavators, and tractors (Caterpillar Tractor Co.).	June 5, 1958	387,000			

See footnotes at end of table, p. 7020

Country and obligor	Credit No.	Purpose (name of supplier in parentheses)	Credit authorized		Interest (percent)	Repayment terms
			Date	Amount		
LATIN AMERICA—Continued						
BRAZIL—continued						
(2) Governo do Estado de Espirito Santo, Departamento de Estradas de Rodagem.	737-25	Motor graders and attachments (Caterpillar Tractor Co.).	May 8, 1958	$150,000		
(2) Oscar Amorim, Comercio, S. A	737-26	Tractors and bulldozers (Caterpillar Tractor Co.).	do	31,000		
(2) Do	958-10	Agricultural disk-plowing harrows (Rome Plow Co.).	June 27, 1958	14,000		
(2) Parana Equipamentos, S. A	737-27	Tractors with attachments (Caterpillar Tractor Co.).	May 8, 1958	36,000		
(2) Sotreq, S. A. de Tratores e Equipamentos	737-28	Tractors and bulldozer attachments (Caterpillar Tractor Co.).	do	91,000		
(2) Do	958-9	Disk-plowing harrows (Rome Plow Co.)	do	29,500		
(2) J. G. Araujo & Co., Ltd	961-9	Tractor and angledozer (Allis-Chalmers Manufacturing Co.).	do	6,000		
(2) Lion, S. A., Engenharia e Importacao	737-29	Tractors, bulldozers, and subsoilers (Caterpillar Tractor Co.).	May 16, 1958	186,000		
(2) Do	737-32	Tractors with attachments (Caterpillar Tractor Co.).	June 5, 1958	93,000		
(2) Companhia Comercial Brasileira	587-6	Farm tractors, harvesters, plows, and harrows (Minneapolis-Moline Co.).	May 22, 1958	75,000		
(2) Cia. Agro-Industrial Vale do Camaragibe	581-7	Diesel electric generator (Worthington Corp.).	June 12, 1958	37,500		
(2) Climerio W. Sarmento-Usina Conceicao do Peixe.	581-8	do	do	37,500		
(2) Cia. Acucareira Usina Joao de Deus	581-9	do	do	28,500		
(2) Usina Cancancao do Sinimbu, S. A	581-10	do	do	28,500		
(2) S. A. Usina Ouricuri	581-11	do	do	37,500		
(2) S. A. Usina Coruripa	581-12	do	do	28,500		
(2) S. A. Usina Sao Simeao-Acucar e Alcool	581-13	do	do	32,000		
(2) S. A. Usina Alegria	581-14	do	do	28,500		
(2) Cia. Acucareira Usina Capricho	581-15	do	do	37,500		
(2) S. A. Leao Irmaos-Acucar e Alcool	581-16	do	do	74,000		
(2) Cia. Acucareira Usina Santa Amalia	581-17	do	do	35,000		
(2) Cia. Agro-Industrial Omena Irmaos	581-18	do	do	28,500		
(2) S. A. Usina Serra Grande	581-19	do	do	74,000		
(2) Cia. Acucareira Usina Laginha	581-20	do	do	42,000		
(2) Usina Santa Clotilde	581-21	do	do	42,000		
(2) Usina Agua Branca, S. A	581-22	do	do	42,000		
(1) Servico Nacional de Aprendizagem Industrial (SENAI).	1016	Machine tools and other equipment	do	4,500,000	5¼	10; semiannually, beginning July 15, 1959.
(2) Departmento de Estradas de Rodagem do Estado de Sao Paulo.	695-2	Highway-construction equipment (Littleford Bros., Inc.).	June 26, 1958	12,000		

CHILE						
(1) Banco Central de Chile	1010	Capital goods	May 23, 1958	15,000,000	5	16; quarterly, beginning July 15, 1960.
COLOMBIA						
(1) Pulpa y Papel Colombianos, S. A	995	Machinery and equipment for pulp and paper mill.	Mar. 6, 1958	5,700,000	5¼	12; semiannually, beginning 3 years after date of note.
(1) Banco de la Republica	1013	Exchange credit	May 29, 1958	78,000,000	5	10; semiannually, beginning Dec. 30, 1961.
COSTA RICA						
(2) Machinery & Tractors Ltd	747-1	Motortrucks and spare parts (Mack Trucks, Inc.).	Feb. 27, 1958	[3] 70,000		
(2) Quiros y Ulatc, Ltda. and Beeche y Fait, Ltda.	580-11	Tournadozer (LeTourncau-Westinghouse Co.).	Mar. 11, 1958	16,600		
CUBA						
(2) Juan Scgismundo Pons Cuesta	1021	Injection molding machines and equipment (Crown Machine & Tool Co., Inc.).	June 26, 1958	14,000		
ECUADOR						
(2) Sociedad Financicra y Comercial del Pacifico.	651-3	Marine diesel engines, accessories and spares (General Motors Corp.).	Mar. 18, 1958	50,000		
HONDURAS						
(1) Cooperative Algodonera de Honduras, Ltda.	976	Equipment for cotton gin	Jan. 10, 1958	230,000	5½	4; annually beginning Dec. 15, 1958.
(2) Casa Comercial Mathews, S. A	737-19	Tractors, earth-moving equipment, etc. (Caterpillar Tractor Co.).	Jan. 23, 1958	[2] 100,000		
(1) Banco Nacional de Fomento	1007	Machinery, equipment, and services for grain storage plant.	May 1, 1958	135,000	5	4; annually, beginning July 15, 1959.
MEXICO						
(1) Nacional Financiera, S. A	975	Rehabilitation of National Railways of Mexico.	Jan. 9, 1958	28,600,000	5½	20; semiannually, beginning Dec. 1, 1959.
(2) Omibus de Mexico, S. A. de C. V	980	Motor coaches (The Flexible Co.)	Jan. 31, 1958	157,000		
(2) Cemento Portland Nacional, S. A	581-6	Diesel engine generating unit (Worthington Corp.).	do	72,500		
(2) Concretos Premezclados de Mixcoac, S. A.	631-2	Cement bin, batcher, elevator, and air compressor (Blaw-Knox Co.).	Feb. 20, 1958	8,600		
(1) Cia. Electrica de Sinaloa, S. A	997	Steam-electric unit	Mar. 13, 1958	500,000	5½	16; semiannually, beginning June 15, 1960.
(2) Diesel Mexicana, S. A	998	Machinery and equipment for rehabilitation of diesel engine crankshafts (Homer M. Keeler, t/a Industria Americana & Co.).	Mar. 20, 1958	72,000		
(1) Ingenio "El Potrero", S. A	1001	Expansion and improvement of sugar-producing facilities.	Apr. 3, 1958	3,000,000	5¼	10; semiannually, beginning, Dec. 1, 1960.
(2) Maquinaria Diesel, S. A	1008	Concrete mixers (Chain Belt Co.)	May 8, 1958	15,000		
(1) Nacional Financiera, S. A	1014	Purchase of sulfur plant	June 5, 1958	2,500,000	3½	26; semiannually, beginning Oct. 11, 1960.

See footnotes at end of table, p. 702.

Credits authorized Jan. 1 to June 30, 1958, and recapitulation for period July 1, 1957, to June 30, 1958—Continued

Country and obligor	Credit No.	Purpose (name of supplier in parentheses)	Credit authorized		Interest (percent)	Repayment terms
			Date	Amount		
LATIN AMERICA—Continued						
MEXICO—continued						
(2) Agromecanica, S. A	1020	Tractor-servicing equipment (Owatonna Tool Co.).	June 19, 1958	$15,000		
(2) Cummins Diesel Export Corp	663-2	Gas engines and attachments	June 12, 1958	[3] 30,000		
NICARAGUA						
(2) Enrique Gurdian y Cia., Ltda	1009	Typesetting machine and accessories (Harris-Intertype Corp.).	May 16, 1958	9,000		
PARAGUAY						
(1) Republic of Paraguay	691	Rehabilitation and extension of airport runway.	Jan. 9, 1958	[1] 320,000	4⅝	14; semiannually, beginning Nov. 15, 1958.
(1) Corporacion de Obras Sanitarias de Asuncion (CORPOSANA)	570	Equipment for water supply	June 12, 1958	[1] 1,000,000	5	50; semiannually, beginning June 15, 1960.
PERU						
(2) A. y F. Wiese, S. A	709-2	Fire truck (Ward La France International, Inc.).	Feb. 27, 1958	6,500		
(2) Lanificio del Peru, S. A	994	Spinning equipment, looms, and curing oven (Whitin Machine Works et al).	Mar. 6, 1958	176,000		
VENEZUELA						
(2) Aerovias Venezolanas, S. A. (AVENSA)	918	Aircraft and spare parts (Fairchild Engine and Airplane Corp.).	June 12, 1958	[1] 200,000		
Total Latin America				149,068,100		
Total all areas				387,176,100		

[1] Increase.
[2] Revolving.
[3] Increase and revolving.
[4] Designates Export-Import Bank participation in credit extended by United States financial institution.

NOTE.—
(1) Designates credit authorized on request of overseas purchaser of United States products.
(2) Designates credit authorized on request of United States exporter or financial institution.

Country and obligor	Credit No.	Purpose	Credit authorized	
			Date	Amount
Asia:				
Iran: Government of Iran	577-D	Equipment for production of cigarettes and other tobacco products.	Mar. 6, 1958	$4,000,000
Philippines:				
China Banking Corp.:				
Approved transactions:				
Pio Barretto Sons, Inc	538-A-9	Sawmill equipment	Mar. 4, 1958	27,000
Central Knitting & Weaving Factory	538-A-10	Yarn dyeing and drying equipment	Mar. 14, 1958	59,000
Zodiac Pharmaceutical Co., Inc	538-A-11	Pharmaceutical equipment	Apr. 14, 1958	26,000
The Philippine Bank of Commerce, Manila:				
Approved transaction:				
Philippine Agar-Agar Factory Co	538-F-4	Manufactur of agar-agar	May 19, 1958	39,000
Security Bank & Trust Co.:				
Approved transactions:				
Manila Bay Spinning Mills, Inc	538-G-4	Construction materials	Feb. 26, 1958	54,500
Refrigeration Industries, Inc	538-G-5	Machinery and equipment	Feb. 6, 1958	55,500
Philam Mining, Inc	538-G-6	Machinery and equipment for mining	Apr. 9, 1958	39,000
Jacinto Steel, Inc	538-G-7	Steel-mill materials	Apr. 11, 1958	58,000
Commonwealth Foods, Inc	538-G-8	Equipment for coffee and grading plant	Apr. 9, 1958	8,000
Central Bank of the Philippines:				
Approved transactions:				
International Textile Mills, Inc	777-A-1	Capital goods and services	Apr. 11, 1958	[1] 175,232
Manila Bay Spinning Mills, Inc	777-A-5	Equipment and services	do	[1] 60,099
Pascual Laboratory	777-A-12	Pharmaceutical equipment	do	33,015
Maximo Dimson	777-A-13	Tractors and tractor loader	do	40,905
Liberty Cotton Mills, Inc	777-A-14	Equipment for cotton mill	do	108,559
H. R. Lopez Co., Inc	777-A-15	Tractors and motor grader	do	289,293
Republic Glass Corp	777-A-16	Equipment for glass industry	do	1,314,676
Universal Textile Mills, Inc	777-A-17	Spinning and weaving machinery and equipment	June 12, 1958	1,354,141
National Rice & Corn Corp	777-A-18	Machinery for the production of grits	do	825,000
The First National City Bank of New York—Port Area Branch, Manila:				
Approved transactions:				
Palawan Quicksilver Mines, Inc	777-B-2	Rotary furnace and condensing system	Jan. 27, 1958	96,000
Permanent Concrete Products, Inc	777-B-3	Equipment for concrete blocks	do	80,000
Philippine Packing Corp	777-B-4	Purchase tractor, bulldozers, and motor graders for Del-monte.	Mar. 10, 1958	102,869
Bulletin Publishing Co	777-B-5	Printing presses and equipment	Mar. 5, 1958	28,517
Commercial Bank & Trust Co., Manila:				
Approved transactions:				
Resins, Inc	777-C-1	Laboratory equipment, supplies, and accessories	Jan. 23, 1958	85,813
San Miguel Brewery, Inc	777-C-2	Machinery for production of glass containers	Jan. 27, 1958	91,000

[1] Increase.

Allocations under credits previously authorized—Continued

Country and obligor	Credit No.	Purpose	Credit authorized	
			Date	Amount
Asia—Continued				
Philippines—Continued				
Plywood Industries, Inc	777-C-3	Machinery and equipment for plywood production	Apr. 10, 1958	$166,000
P. Floro & Sons, Inc	777-C-4	Electrical equipment	Mar. 28, 1958	42,000
Lianga Bay Logging Co., Inc	777-C-5	Yarders and accessories	Apr. 2, 1958	94,000
Peoples Bank & Trust Co., Philippines:				
Approved transactions:				
Chronicle Publications	777-D-1	Equipment for newspaper	May 12, 1958	31,324
Republic Flour Mills, Inc	777-D-2	Flour-milling machinery	June 6, 1958	34,230
Philippine Handicraft, Inc	777-D-3	Embroidery machinery and attachments	June 9, 1958	59,975
China Banking Corp., Manila	777-G	Machinery, equipment, materials, and services	May 1, 1958	350,000
Equitable Banking Corp., Manila	777-H	do	do	350,000
Prudential Bank & Trust Co., Manila	777-I	do	do	350,000
Philippine Bank of Commerce, Manila	777-J	do	do	350,000
Security Bank & Trust Co., Manila	777-K	do	do	350,000
The First National City Bank of New York, Manila	777-L	do	do	350,000
Philippine Banking Corp., Manila	777-M	do	do	350,000
Pacific Banking Corp., Manila	777-N	do	do	350,000
Bank of the Philippine Islands, Manila	777-O	do	do	350,000
Philippine Trust Co., Manila	777-P	Machinery, equipment, materials, and services	do	350,000
Latin America:				
Argentina:				
Corporacion Cementera Argentina, S. A	826-B-2 (637-5)	Power shovel (Baldwin-Lima-Hamilton Corp.)	Jan. 9, 1958	20,900
Brander & Cia., S. A., Importadora, Comercial e Industrial.	826-B-3 (737-18)	Traxcavator, motor graders, and tractors (Caterpillar Tractor Co.).	Jan. 10, 1958	355,500
Do	826-B-4 (737-20)	Traxcavators, motor graders, tractors, bulldozers, roller and scraper (Caterpillar Tractor Co.).	Feb. 13, 1958	524,000
Do	826-B-4 (737-20)	do	Mar. 18, 1958	[1] 15,000
Do	826-B-5 (591-2)	Force-feed loader with attachments (Athey Products Corp.).	Feb. 13, 1958	9,100
Do	826-B-6	Crane with attachments and excavator with attachments	do	18,500
Do	826-B-11 (737-22)	Traxcavators, motor graders, scrapers, tractors, and bulldozers (Caterpillar Tractor Co.).	Mar. 13, 1958	534,000
Do	826-B-13 (640-5)	Crawler crane and dumptors (Koehring Co.)	Apr. 3, 1958	31,000
Do	826-B-18 (737-23)	Earth-moving equipment (Caterpillar Tractor Co.)	Apr. 22, 1958	77,500
Do	826-B-23 (737-30)	Tractors, bulldozers, scrapers, motor graders, etc. (Caterpillar Tractor Co.).	May 16, 1958	463,000
Do	826-B-24 (591-3)	Side-dump trailers (Athey Products Corp.)	do	34,000
Industrias Puerto San Martin (IPSAM)	826-B-16	Expansion of steel-barrel-manufacturing facilities	Apr. 17, 1958	90,000

Storer, S. A., Comercial, Industrial y Financiera	826-B-7 (583-3)	Asphalt-mixing plant (Barber-Greene Co.)	Mar. 13, 1958	58,500
Do	826-B-9 (666-4)	Road roller and motor grader (the Galion Iron Works)	do	14,000
Do	826-B-10 (721-1)	Rock crusher and vibrating screen (Smith Engineering Works).	do	34,000
Do	826-B-14 (666-5)	Road roller (The Galion Iron Works)	Apr. 3, 1958	2,900
Do	826-B-17 (583-4)	Asphalt mixing plants (Barber-Greene Co.)	Apr. 22, 1958	97,000
Do	826-B-21 (666-6)	Road rollers (The Galion Iron Works)	May 1, 1958	5,700
Do	826-B-26 (721-2)	Rock crushers and attachments (Smith Engineering Works).	May 16, 1958	77,000
Do	826-B-32 (583-6)	Asphalt-mixing plant (Barber-Greene Co.)	June 5, 1958	54,000
Dobranich & Cia., S. R. L	826-B-8 (661-2)	Crawler mount-lifting crane (Universal Marion Corp.)	Mar. 13, 1958	16,200
Do	826-B-12 (637-6)	Motor graders and road roller (Baldwin-Lima-Hamilton Corp.).	Mar. 27, 1958	25,500
Do	826-B-30	Pulvi-breaker and accessories (American-Marietta Co.)	May 22, 1958	9,000
Do	826-B-34	Trailers and accessories (Brown and Sites Co., Inc.)	June 5, 1958	13,000
Do	826-B-40 (661-3)	Crawler mount-lifting crane (Universal Marion Corp.)	June 27, 1958	16,500
Equimac, S. A	826-B-15 (613-1)	Asphalt plant (Poor & Co., Inc.)	Apr. 10, 1958	50,000
Casa Stewart, S. A	826-B-19 (663-6)	Diesel engines with attachments (Cummins Engine Co., Inc.).	May 1, 1958	120,000
Equipos y Materiales, S. A. Comercial e Industrial	826-B-20 (664-6)	Road-construction machinery and equipment (Harnischfeger Corp.).	do	198,000
Do	826-B-25 (664-7)	Earth-moving and construction machinery (Harnischfeger Corp.).	May 16, 1958	395,000
Do	826-B-27	Sand and gravel loader (N. P. Nelson Iron Works, Inc.)	do	8,500
Do	826-B-28 (684-2)	Vibrating compactor (Iowa Manufacturing Co.)	May 22, 1958	8,600
Do	826-B-29 (684-3)	Jaw crushers (Iowa Manufacturing Co.)	May 22, 1958	14,000
Do	826-B-31 (580-13)	Highway and construction equipment (Le Tourneau-Westinghouse Co.).	May 29, 1958	301,000
Do	826-B-33 (667-2)	Highway and railroad construction equipment (J. I. Case Co.).	June 5, 1958	32,000
Do	826-B-35 (695-1)	Highway-construction equipment (Littleford Bros., Inc.)	June 12, 1958	27,000
Do	826-B-36	Concrete mixer (Chain Belt Co.)	June 26, 1958	3,600
Teodoro E. Toldi, S. R. L	826-B-22	Equipment for knitting mill	May 8, 1958	160,000
Cristalerias Rigolleau, S. A	826-B-37	Equipment for glass-bottle-manufacturing plant	June 27, 1958	620,000
La Papelera del Plata, S. A	826-B-38	Papermaking machinery	June 27, 1958	1,100,000
General Electric Argentina, S. A	826-B-39 (687-3)	Road-construction equipment, (Bucyrus-Erie Co.)	June 27, 1958	243,000
Lucardi, Aguirre, Mastro y Cia., S. A	826-B-41 (961-11)	Highway equipment (Allis-Chalmers Manufacturing Co.)	June 27, 1958	14,000
Total allocations				18,869,148
Exporter credit lines:				
3 Authorized				3,200,000
2 increases				500,000
				3,700,000

[1] Increase.

Recapitulation of authorizations, by months, July 1, 1957, to June 30, 1958

	Overseas purchasers	Amount	On request of United States exporters	Amount	Total credits authorized		Allocations and approved transactions	
					Number	Amount	Number	Amount
July 1957	5	$199,800,000	4	$329,805	9	$200,129,805	4	$11,751,183
August 1957	4	38,620,000	15	1,059,450	19	39,679,450	------	----------
September 1957	4	113,358,000	6	237,000	10	113,595,000	1	88,000
October 1957	6	51,466,500	8	3,762,900	14	55,229,400	4	2,412,174
November 1957	3	16,781,000	17	543,950	20	17,324,950	7	2,656,614
December 1957	4	39,640,000	12	2,798,425	16	42,438,425	13	10,140,145
Total, 6 months 1957	26	459,665,500	62	8,731,530	88	468,397,030	29	27,048,116
January 1958	5	31,050,000	9	1,663,600	14	32,713,600	6	729,213
February 1958	4	191,200,000	11	390,900	15	191,590,900	5	661,600
March 1958	3	13,200,000	8	465,100	11	13,665,100	13	4,956,586
April 1958	3	10,250,000	8	2,416,500	11	12,666,500	19	2,761,179
May 1958	4	100,235,000	17	1,678,500	21	101,913,500	25	5,364,124
June 1958	5	32,550,000	26	2,076,500	31	34,626,500	14	4,396,446
Total, 6 months 1958	24	378,485,000	79	8,691,100	103	387,176,100	82	18,869,148
Grand total	50	838,150,500	141	17,422,630	191	855,573,130	111	45,917,264

Types of loans	Number	Amount
Government	18	$532,869,000
Government guaranties	69	186,312,975
Private entities	104	136,391,155
Total	191	855,573,130

CAPITAL FROM COMMERCIAL BANKS AND LIFE-INSURANCE COMPANIES

Mr. ROONEY. What steps, if any, have you taken with regard to the policy laid down by Congress that the Export-Import Bank should supplement and encourage private capital and not compete with it?

Mr. WAUGH. Mr. Rooney, I am very happy you asked that question.

Last year, due to the demand that the private banks had from their own customers, we were not successful in placing a great deal of paper with the private banks or with the insurance companies. By way of contrast, sales to commercial banks from the Export-Import Bank loan portfolio in fiscal year 1958 amounted to $121,200,982.

Mr. WAUGH. Furthermore, sir, during the last 12 months we have had unusual cooperation from a new source of private capital which has not been tapped heretofore; namely, the life-insurance companies. This present year, we had the presidents of 13 of the largest life-insurance companies in the United States come to Washington to spend an afternoon to study the bank and the bank's operations.

We have made one outstanding commitment; namely, a $75 million loan to the American Foreign Power Co., for operations in Latin America, whereby the Export-Import Bank took $25 million and the Metropolitan Life Insurance for its own account took $25 million, and the balance is being offered to numerous life-insurance companies, investment trusts, and pension funds.

COSTS OF SERVICES PERFORMED FOR OTHER AGENCIES

Mr. ROONEY. How much workload is involved, and what arrange-

ments have you for reimbursement in your administration of loans and guaranties for ICA?

Mr. WAUGH. Well, we have a fund that is presumed to take care of the actual expense of the operation. The figure last year, if I remember correctly, was $24,000. It has always seemed to me that this was a very low figure, taking into consideration the amount of work involved. Our bank has gone on the theory we are not operating that particular department at a profit, and the United States Government had to pay for it in the long run.

Therefore, we have never made a point of insisting upon a large reimbursement. Frankly, I think for the work that we do and the responsibility involved, the amount is too low. Our budget request for the coming year includes $45,100 for this purpose.

Mr. ROONEY. What would be the answer to the same question with regard to defense production loans for the Office of Defense Mobilization?

Mr. WAUGH. There are only 1 or 2 of those loans. Let me correct that: There are several loans in the African field, and that is included in this contractual figure.

Mr. ANDERSON. They involve very little work except for the collection thereof.

Mr. ROONEY. Is this $45,100 figure an overall figure?

Mr. WAUGH. For other contractual services performed for other agencies? Yes, sir.

Mr. ROONEY. That would include the Cooley amendment loans?

Mr. WAUGH. No, sir; the Cooley amendment is our responsibility.

Mr. ROONEY. Could you give me the figure with regard to ICA?

Mr. WAUGH. I will furnish that to you exactly. It is $31,900.

Mr. ROONEY. What would you say the figure was with regard to the Office of Defense Mobilization?

Mr. STAMBAUGH. We do not get reimbursement from this agency. We loan our own funds, and they guarantee us against loss on the loans.

RFC LOANS

Mr. ROONEY. How much workload is involved, and what arrangements, if any, do you have for reimbursement in connection with the loans, and assets turned over by RFC?

Mr. WAUGH. I am sorry, sir, but I cannot answer that question.

Mr. ANDERSON. May I answer?

Mr. WAUGH. Please.

Mr. ANDERSON. We received the foreign assets of the RFC, and at this time we have only two items: One is the balance of the loan to the Philippines which as a result of a payment 2 days ago of $3 million, is down to $17 million.

Then, our Government also has an investment of $3 million in the Amazon Credit Bank of Brazil. The work performed is nominal—it consists of rendering statements and receiving payments and paying collections into the Treasury of the United States.

We are negotiating off and on to sell our Government's interest in the Amazon Credit Bank, representing an original investment of $3 million, but as to the outcome of that, I cannot predict at this time. In fact, one of our directors is in Brazil now, and this is one of the things he will try to do—to negotiate the sale of the Amazon Credit Bank of Brazil stock.

Mr. WAUGH. The question, Mr. Anderson, is what reimbursement, if any, do we get for handling these items for the Government?

Mr. ROONEY. That is part of the question.

Mr. ANDERSON. In the arrangements which were made for us to take over certain RFC foreign assets there was no provision for reimbursement. We are doing it for the Treasury of the United States.

COLLECTION OF PAYMENTS FROM THE REPUBLIC OF GERMANY

Mr. ROONEY. What would be the answer to the same question with regard to the collection of payments from the Federal Republic of Germany?

Mr. ANDERSON. There is no provision there for our workload. Let me correct myself. There is no reimbursement allowance for us in that. Our work so far has consisted of rendering statements, and receiving payments which we promptly transmit to the Treasury of the United States.

It represents a nominal responsibility.

Mr. ROONEY. Very well.

WORKLOAD FOR LOANS UNDER THE COOLEY AMENDMENT

Now, the same question with regard to loans under Public Law 85–128 of the 85th Congress known as the Cooley amendment loans?

Mr. WAUGH. Those, Mr. Chairman, represent our own responsibility, and there would be no reimbursement. We have a request for $55,000 to take care of the added expenses in accordance with the estimates we have to date.

Mr. ROONEY. That is included in the matter presently before the committee; is it?

Mr. WAUGH. Yes, sir.

Mr. ROONEY. What about the amount of workload? Could you describe that to us?

Mr. WAUGH. I do not think I am in a position to describe the workload. I think it is covered in the presentation.

Mr. ANDERSON. Could I answer that question, Mr. Chairman?

Mr. ROONEY. Yes; if you will.

Mr. ANDERSON. In discussions with the Bureau of the Budget last November, they gave us a measurement or a measurement was made that we would require at least five additional people to handle the Cooley amendment work. Since that time we have suggested to the Bureau of the Budget officially and personally that it was an underestimate, and that we are going to be penalized in our other work relationships by having to provide technicians beyond our expectations.

Mr. ROONEY. That being so, how many of the requested 25 people in the instant budget would be for use in connection with the Cooley amendment program?

Mr. WAUGH. May I answer that in this way, Mr. Chairman?

Mr. ROONEY. To keep the record straight, you were speaking of the 5 that you discussed with the Bureau of the Budget a year ago, and my question was with regard to the instant request for 25.

Mr. ANDERSON. Excuse me, sir. May I make myself clear? The five that I referred to are included in our present presentation to you, sir.

Mr. ROONEY. In other words, 5 of the requested additional 25 are in connection with the Cooley amendment program?

Mr. ANDERSON. Yes, sir; that is correct.

Mr. WAUGH. May I clarify just one item?

Mr. ROONEY. Yes; most certainly.

Mr. WAUGH. We do not use additional people exclusively for the handling of the Cooley amendment. In other words, when a Cooley amendment loan is made, or funds are turned over to us to use in a given country, we use the same loan officers, the same economists that handle our other loans for the country, and so forth. In other words, we think it is much more efficient to absorb the additional work of the Cooley loans in our present staff, rather than setting up a complete separate staff.

COST OF SERVICES PERFORMED FOR THE DEVELOPMENT LOAN FUND

Mr. ROONEY. How much workload do you anticipate, and what arrangements will you have for reimbursement in your administration of the Development Loan Fund?

Mr. WAUGH. There is no reimbursement. Those are all our own funds, and that is part of the estimate that we make right here.

Mr. ROONEY. I have reference to Development Loan funds.

Mr. WAUGH. Development Loan Fund. My mistake—I thought you meant our own development loans.

We have not made any estimate as yet as to the amount of work that will be involved. We were advised, however, that the Development Loan Fund had in their budget originally an estimate of $10,000 for services of the Export-Import Bank.

Off the record.

(Discussion off the record.)

Mr. ROONEY. Incidentally, has there been any discussion with regard to the Export-Import Bank taking over this Development Loan Fund, as such, leading to an abandonment of the present plan?

Mr. WAUGH. There was some discussion, Mr. Chairman, more informal than formal, at the time the presentation was made by Secretary Dulles in April of 1957, but no formal plan was submitted.

Mr. ROONEY. What steps have you taken or will you take to prevent the so-called Development Loan Fund from invading your territory?

Mr. WAUGH. The Congress in establishment of the Development Loan Fund named three men to handle the policy matters of the Fund. The first was the then Deputy Under Secretary of State for Economic Affairs, C. Douglas Dillon, the Director of ICA, Mr. James Smith, and the president of the Export-Import Bank. The recent Mutual Security Act, or the recently enacted Mutual Security Act, as I understand it, provides for a corporation with five directors. In addition to the three mentioned above there is to be added the Assistant Secretary of the Treasury for International Affairs, Mr. Tom B. Coughran, who is the United States representative on the International Bank for Reconstruction and Development Board, and the director of the Fund, Mr. Dempster McIntosh.

Answering your specific question, the problems that have arisen in connection with a possible conflict of activities between the Development Loan Fund and the Export-Import Bank have given the President of the Export-Import Bank and the Board of Directors and the staff a great deal of concern. The law states specifically that the Development Loan Fund is not to compete or, rather, is not to make loans in areas where private capital, or loans from the Export-Import Bank or the International Bank for Reconstruction and Development is available.

(Discussion off the record.)

CONTRIBUTIONS TO CIVIL SERVICE RETIREMENT FUND

Mr. ROONEY. Is the increase of $11,300 for contributions to the civil service retirement fund based entirely on the proposed increase of the 25 positions to the staff?

Mr. WALSH. Yes, sir.

LIMITATION ON ADMINISTRATIVE EXPENSES

Mr. ROONEY. Is the proposed limitation of the equivalent of $200,000 in foreign currencies part of the request now pending before this committee?

Mr. ANDERSON. Let me explain, Mr. Chairman, that is a separate limitation. The purpose of that is to pay attorneys fees, bank fees, and other fees in foreign countries.

Mr. WAUGH. Let me just emphasize that the $200,000 is not $200,000 in appropriated dollars. It is the equivalent in foreign currencies.

Mr. ROONEY. It is not a request for $200,000 to get the equivalent of $200,000 in foreign currencies out of the Treasury?

Mr. WAUGH. No, sir; that is the point I want to make clear. When we get these Public Law 480 funds, they come to us in the local currencies of the various countries. Our request is to be authorized to pay out of these local currencies Cooley program expenses incurred in the foreign countries.

Mr. ROONEY. Is that in the presentation now before this committee?

Mr. WAUGH. Yes, sir.

Mr. STAMBAUGH. May I say something?

Mr. ROONEY. Surely.

Mr. STAMBAUGH. I think you should not confuse this equivalent of $200,000 with the funds to be expended out of the earnings of the Export-Import Bank. It does not come out of that at all. It comes out of the funds transferred to us in local currencies for the purpose of lending under the Cooley amendment.

Mr. ROONEY. What page are you referring to?

Mr. STAMBAUGH. Page 34, "Limitation on administrative expenses."

Mr. ROONEY. (reading):

> Not to exceed the equivalent of $200,000 of the aggregate amount of foreign currencies made available to the Export–Import Bank for loans pursuant to the Agricultural Trade Development and Assistance Act of 1954, as amended, shall be available during the current fiscal year for expenses incurred by the Export-Import Bank in foreign countries incident to such loans.

Mr. WAUGH. Yes, sir.

Mr. Chairman, I would like to say that it is our studied opinion, now that we have had some experience in Public Law 480 loaning, that we will not use $200,000 or any sizable amount thereof.

We thought we might have to employ counsel in foreign countries, but it looks now that we are going to be able to do this with our own staff and we will not use any sizable amount of foreign currencies. We cannot use this fund to travel to a foreign country. We can use these funds only when we are in the country, and only on the Cooley amendment operations. My own hope is that this $200,000 equivalent in soft currencies will not be confused with our budget.

Mr. FORD. As a practical matter, would it not be well if you could use up as much as is legitimately possible out of foreign currencies?

This country has so much of that all over the world I sometimes doubt that we will ever get a reasonable return on what we now have available.

Mr. WAUGH. We do not see how we can use, now after having experience—this estimate was put in a year ago—anywhere near $200,000 of foreign currencies for the expense of operation under the Cooley fund.

Mr. ROONEY. Mr. Natcher, do you have any questions?

LOANS FOR THE PURCHASE OF SURPLUS COMMODITIES

Mr. NATCHER. Mr. Waugh, I would appreciate it if you would insert in the record at this point a statement setting forth the number of loans that have been made during the past 3 years with the money used to purchase surplus commodities.

I am not interested now in the name of the country but just the amount of the loan and the surplus commodity that the money was used to purchase.

Mr. WAUGH. May I suggest, sir, that you use the word "commodity" rather than "surplus commodity," because we make loans, for example, on commodities, and have for a number of years. We can give you the number of commodity loans we have made for a 3-year period.

Mr. NATCHER. Of course, you understand when I used the words "surplus commodities" I had in mind the six basic crops that we have in surplus. Of course, I know that heretofore—and, in fact, you and I have discussed this matter once or twice before——

Mr. WAUGH. That is true.

Mr. NATCHER. It is all right with me just to use the word "commodities."

If you will insert that in the record, I will appreciate having it. I am not interested in the country, but the amount of the loan, or the portion of the loan which was used to purchase a particular commodity, and what commodity.

Mr. WAUGH. Yes, sir. We can also without any problem at all, sir, add the countries.

Mr. NATCHER. That is all right, but I thought, perhaps, you might want to leave that out.

Mr. WAUGH. No, sir; it is all a matter of public record.

(The information requested follows:)

Export-Import Bank of Washington—Commodity credits authorized, fiscal years 1956, 1957, and 1958

Country	Amount authorized	Commodities				
		Tobacco	Wheat	Barley	Soybeans	Cotton
Fiscal 1956: Japan	$60,000,000					$60,000,000
Fiscal 1957:						
Austria	8,000,000					8,000,000
Japan	60,000,000					60,000,000
Peru	2,250,000		$2,250,000			
Total	70,250,000		2,250,000			68,000,000
Fiscal 1958:						
Austria	12,000,000					12,000,000
Japan	115,000,000	$1,695,008	35,367,585	$11,578,480	$15,592,774	50,766,153
Do	60,000,000					60,000,000
Total	187,000,000	1,695,008	35,367,585	11,578,480	15,592,774	122,766,153
Grand total	317,250,000	1,695,008	37,617,585	11,578,480	15,592,774	250,766,153

Mr. NATCHER. Thank you, Mr. Chairman.

Mr. ROONEY. Mr. Ford, do you have any questions?

Mr. FORD. I think this has been a very excellent presentation, and a fine record, Mr. Waugh.

COOLEY AMENDMENT LOAN PROCEDURES AND SIZE OF PROGRAM

I would like, if you could, in very brief outline form to tell us how you go about making a Cooley amendment loan. Could you take a specific example, and just for the record tell us what happened?

Mr. WAUGH. Yes, sir. We have just concluded the first series of Cooley Loans that have been made, and they were in Mexico.

By way of history of procedure, when a Public Law 480 agreement is signed, up to 25 percent is allocated to the Export-Import Bank for reloaning under the terms of the Cooley amendment. We can, if you would like, insert in the record a table which gives the number of sales agreements, the size of the program, and the percentage of proceeds, the dollar equivalent in local currencies, and so forth, if you would like to have that in the record.

Mr. ROONEY. Thank you. I think it might be well if we inserted that in the record at this point.

Mr. FORD. Fine.

(The matter referred to follows:)

TABLE I.—*Agricultural commodities agreements under Public Law 480*

[Money amounts in millions]

	Sales agreement announced	Size of program market value	Funds allocated to Eximbank under sec. 104 (e) as amended		
			Percent of proceeds	Dollar [1] equivalent	Local [2] currency
Burma	May 27, 1958	$18.0			
Ceylon	June 18 and 30, 1958	6.3	25	1.5	7.0
China (Taiwan)	Apr. 18, 1958	12.1	25	3.0	75.0
Colombia	Mar. 14, 1958	9.0	25	2.2	14.3
Ecuador	June 30, 1958	1.8	25	0.5	7.0
Finland	Feb. 21, 1958	9.0	25	2.3	736.0
France	Dec. 27, 1957, Feb. 28 and June 30, 1958.	27.7	25	6.9	2,898.0
Greece	Dec. 18, 1957	19.8	15	2.9	87.3
Iceland	May 3 and June 30, 1958	3.5	25	0.8	12.0
India	June 20, 1958	57.0	25	14.2	54.6
Israel	Nov. 7, 1957 and June 30, 1958	41.0	25	10.2	19.0
Italy	Mar. 7 1958	25.0	25	6.2	3,906.0
Korea	Feb. 5, 1958	50.0	4	2.0	1,000.0
Mexico	Oct. 23, 1957	28.2	25	7.1	88.7
Pakistan	Nov. 15, 1957	65.4	25	16.4	77.0
Peru	Apr. 9, 1958	7.8	25	2.0	42.5
Philippines	June 3, 1958	4.1	25	1.0	2.0
Poland	Aug. 14, 1957 and Feb. 15, 1958	119.6			
Spain	Jan. 27, Apr. 10, and June 30, 1958.	98.2			
Turkey	Jan. 20 and June 25, 1958	52.0	15	7.8	39.0
United Kingdom	Feb. 3 and 17, 1958	13.0			
Vietnam	June 17, 1958	6.0	25	1.5	52.5
Yugoslavia	Dec. 27, 1957, Feb. 3 and June 26, 1958.	73.1			
Total		747.6		88.5	
Percent		100.0		11.8	

[1] This figure is frequently an approximation because of uncertainty concerning the exchange rate which will actually apply.
[2] Includes 11 credits authorized aggregating 41,000,000 pesos.

Mr. WAUGH. Continuing with reference to Cooley procedure, the word goes out to the country—for example, Mexico is the one we have just completed—and then we receive applications from the applicants who are qualified and some who are not qualified for loans from the bank.

We sort out these applications as to the ones we believe are eligible under the act, and whether or not they qualify as being the proper type of borrowers.

Then, we study as to whether or not we think that the loans made will be for constructive purposes. In other words, we automatically eliminated the repayment of existing debts and the furnishing of equity capital and whether or not they are doing something to build a business or construct a business or to expand a business.

We make our decisions on that basis. Then, it is necesary for us to get the approval of the foreign government. In this case Mexico appointed the National Financiera as their agent. So, we made up a list of our recommended applications and submitted them to the Mexican Government for their approval. The approvals came back recently; in fact, during this past month, and I have here a list of 11 loans that were authorized under the Cooley amendment in June 1958, the first group of loans that have been made.

I think it would be of interest to put this in the record, showing who is borrowing the Cooley money and what it is for, and how much of a loan we made in each instance.

You understand this will come in our annual report, but for the purpose of this committee's study, I think that this first list of approvals might well go in the record.

Mr. ROONEY. We shall insert these two pages at this point in the record.

(The matter referred to follows:)

Export-Import Bank of Washington—Credits authorized pursuant to sec. 104 (e) of Public Law 480, June 30, 1958

Country and obligor	Credit No.	Purpose	Credit authorized	
			Date	Amount
LATIN AMERICA				
Mexico:				*Mexican pesos*
Wyatt de Mexico, S. A. de C. V.	C-23-1	Land, buildings, and equipment for expansion of metal and boiler works.	June 19, 1958	2,620,000
Cia. Mexicana de Refractarios A. P. Green, S. A.	C-23-2	Machinery and equipment required in connection with the expansion of plants for the production of fire clay refractories and specialties.	-----do-----	8,500,000
Sears, Roebuck de Mexico, S. A. de C. V.	C-23-3	Machinery and equipment required in connection with retail merchandise activities.	-----do-----	10,000,000
International Harvester Company of Mexico, S. A. de C. V.	C-23-4	Equipment for manufacturing farm implements and truck parts.	-----do-----	937,000
John Deere de Mexico, S. A. de C. V.	C-23-5	To finance the acquisition of lands and buildings in connection with the construction of facilities for the manufacture of agricultural tractors, machinery, and implements.	-----do-----	5,000,000
Lamparas General Electric de Mexico, S. A. de C. V.	C-23-6	Machinery for the expansion of facilities for the production of incandescent and fluorescent lamps.	-----do-----	4,070,000
Grace y Cia. (Mexico), S. A. de C. V.	C-23-7	Mexican machinery and equipment for reconstruction of plant for the production of folding boxes.	-----do-----	4,900,000
Philco, S. A. de C. V-----	C-23-8	Machinery and equipment for manufacture and distribution of radios, refrigerator transformers, speakers, and related products.	-----do-----	835,000
Perfeccion y Lovable de Mexico, S. de R. L.	C-23-9	Machinery and equipment for manufacture of brassieres and similar women's wearing apparel.	-----do-----	600,000
Negociacion Textil "La Concordia", S. A .	C-23-10	Machinery and equipment for dyeing and finishing plant for processing synthetic fabrics.	-----do-----	3,000,000
Beneficiadora y Industrializadora, S. A. de C. V.	C-23-11	Machinery and equipment for expansion of facilities for the production of steroid hormone intermediates.	-----do-----	572,000
Total Mexican pesos --	---------	----------	----------	41,034,000

Source: Office of the Treasurer, Accounts Division.

Mr. FORD. When these loans are repaid, are those repayments then eligible for reloaning under the Export-Import Bank's jurisdiction?

Mr. WAUGH. The law is not as clear on that point as we would like to have it, and in view of the fact that the law has not been clear, we take the position that they go to the United States Treasury for further disposition by the Treasury or the Congress.

In other words, it is not in our opinion a revolving fund.

Mr. FORD. Would it be your recommendation that it should be a revolving fund?

Mr. WAUGH. Mr. Ford, I think this is tied in with the subject you mentioned a moment ago; namely, the proper handling of the foreign currencies which the United States had acquired in one way or another. I think this Public Law 480 foreign currency is but a part of a very much larger overall picture.

Mr. FORD. Have you had enough experience with the Cooley amendment program to voice an opinion as to its soundness and its desirability?

Mr. WAUGH. We are just starting, and we have nothing very much in the way of experience, but I can say that it has been very well received in certain countries.

Mr. FORD. That is all, Mr. Chairman.

Mr. ROONEY. I believe that is all, if there are no further questions, and we wish to express our thanks to you, Mr. Waugh, and your associates, for a very interesting presentation. The committee will stand adjourned.

Mr. WAUGH. Thank you, Mr. Rooney, and gentlemen.

SUBCOMMITTEE ON DEPARTMENT OF AGRICULTURE AND RELATED AGENCIES APPROPRIATIONS

JAMIE L. WHITTEN, Mississippi, Chairman

FRED MARSHALL, Minnesota	H. CARL ANDERSEN, Minnesota
WILLIAM H. NATCHER, Kentucky	WALT HORAN, Washington
ALFRED E. SANTANGELO, New York	CHARLES W. VURSELL, Illinois

SOIL BANK PROGRAMS

ACREAGE RESERVE PROGRAM

WITNESSES

MARVIN L. McLAIN, ASSISTANT SECRETARY OF AGRICULTURE
WALTER C. BERGER, ADMINISTRATOR, COMMODITY STABILIZATION SERVICE
ROBERT P. BEACH, ASSISTANT DEPUTY ADMINISTRATOR, OPERATIONS, COMMODITY STABILIZATION SERVICE
HOWARD J. DOGGETT, DIRECTOR, SOIL BANK DIVISION, COMMODITY STABILIZATION SERVICE
CHARLES L. GRANT, DIRECTOR OF FINANCE AND BUDGET OFFICER, DEPARTMENT OF AGRICULTURE

Mr. WHITTEN. The subcommittee will come to order. We are glad to have with us this afternoon Assistant Secretary McLain and his associates.

We have before us a supplemental request for $282,800,000 for the acreage reserve program. I would like to insert in the record the portion of page 12 in House Document No. 394 and the justifications. Following that, Mr. McLain, we would be glad to hear your statement.

Mr. McLAIN. Thank you, Mr. Chairman.

(The above-mentioned documents follow.)

[Extract from H. Doc. No. 394]

"Soil Bank Programs

"acreage reserve program

"For an additional amount for 'Acreage reserve program', $282,800,000; *and the limitation under this head in the Department of Agriculture and Farm Credit Administration Appropriation Act, 1959, on the amount available for administrative expenses, is increased from '$13,000,000' to '$20,600,000'.*"

Due to the heavy participation in the 1958 acreage reserve program, the Second Supplemental Appropriation Act, 1958, authorized an increase in the 1958 crop year acreage reserve program from $500 million to $750 million. Because of this increase, and since previous estimates were based on a program level below the $500 million authorized, this supplemental appropriation is necessary to make payments to farmers during the fiscal year 1959.

Justification for supplemental estimate, fiscal year 1959, for acreage reserve program, soil bank programs

	Fiscal year 1959		
	In budget	Supplemental estimate	Revised total
Acreage reserve program:			
Acreage reserve program payments	$317,000,000	+$275,200,000	$592,200,000
Operating expenses	13,000,000	+7,600,000	20,600,000
Total estimate	330,000,000	+282,800,000	612,800,000

The Second Supplemental Appropriation Act, 1958, authorized a 1958 acreage reserve program of $750 million. This act was passed on March 28, 1958, after the 1959 budget had been transmitted to the Congress. The funds requested in the budget to pay producers who participated in this program were based on an authorized acreage reserve program of $500 million. The budget estimate anticipated that agreements under the 1958 program would reach only $485,600,000, or $14,400,000 less than the authorization. The estimate contemplated that $168,600,000 of program payments would be made from the 1958 appropriation. It provided for the balance of $317 million of program payments to be paid from the 1959 appropriation. Subsequent to transmission of the budget, an unexpectedly heavy signup developed for 1958 crops of cotton and corn. Applications for agreements from producers nearly reached a total of $750 million. In order to permit acceptance of such applications, the Congress in the Second Supplemental Appropriation Act increased the authorization to $750 million. The following table represents the variations in estimated requirements for the acreage reserve program due to the unanticipated heavy signup by producers:

Estimated requirements, acreage reserve program, 1956, 1957, and 1958 programs

Type of expense	Fiscal year 1957	Fiscal years 1958 and 1959 original budget estimate		Fiscal years 1958 and 1959 current budget estimate			Total program payments, current estimate
		1958 amount	1959 amount	1958 amount	1959 amount	Increase, supplemental estimate, col. (5)—(3)	
	(1)	(2)	(3)	(4)	(5)	(6)	
Program payments:							
1956 program	$248,175,261	$12,100,000		$824,739			$249,000,000
1957 program	228,985,815	384,800,000		381,014,185			610,000,000
1958 program		168,600,000	$317,000,000	105,661,076	$592,200,000	+$275,200,000	697,861,076
Total program payments	477,161,076	565,500,000	317,000,000	487,500,000	592,200,000	275,200,000	1,556,861,076
Operating expenses:							
CSS	33,599,502	34,400,000	12,900,000	34,650,000	20,500,000	+7,600,000	
OGC	37,329	87,500	87,500	87,500	87,500		
Information	10,508	12,500	12,500	12,500	12,500		
Total operating expenses	33,647,339	34,500,000	13,000,000	34,750,000	20,600,000	+7,600,000	
Total, acreage reserve program	510,808,415	600,000,000	330,000,000	522,250,000	612,800,000	+282,800,000	
Transfer to CCC				78,000,000			
Total appropriation or estimate		600,000,000	330,000,000	600,250,000	612,800,000	+282,800,000	

(1) The increase of $275,200,000 for program purposes is necessary to complete payments to producers participating in the expanded 1958 acreage reserve program. Based on preliminary reports as of May 9, 1958, it is estimated that a total of $697,861,076 will be paid to producers on the 1958 program. The regular 1959 appropriation bill provides $317 million for payments on the 1958 program. It is estimated that $105,661,076 will be paid to producers on the 1958 program from the 1958 appropriation. The balance required is therefore $275,200,000. The amount of $105,661,076 estimated to be paid from the 1958 appropriation represents an increase over previous estimates. It reflects our judgment that due to noncompliance, cancellations, and adjustments, actual compensation paid will be $11,362,982 less than the maximum compensation under signed agreements for the 1956 program and $3,838,570 less than the maximum compensation under signed agreements for the 1957 program. These amounts may therefore be applied to payments for the 1958 program.

The 1959 budget estimate for this program was based on payments required under a $500 million program for 1958 crops as authorized in the 1958 appropriation act, and reflected an anticipated short fall signup under this program. The Second Supplemental Appropriation Act, 1958, increased the 1958 program authorization to $750 million because of the heavy participation on cotton and corn which materialized. Because this act was passed late in March 1958, it was not possible to provide for the additional requirements in the regular budget.

Under current procedures, program funds are advanced to the Commodity Credit Corporation periodically in amounts estimated to be required to cover negotiable certificates to be issued to producers by ASC county offices. Funds advanced are expenditures under the appropriation "Acreage reserve program." Allocations are issued to ASC offices limiting the issuance of certificates to amounts advanced to the Corporation. For various reasons ASC offices may not be able to issue, before June 30, 1958, certificates equal to allocations. If amounts equal to such unused allocations were withdrawn from the Corporation and returned to the appropriation, this proposed supplemental appropriation would probably be inadequate. In order to keep the amount of the supplemental to the minimum, it is therefore necessary that funds advanced to CCC in the fiscal year 1958 in excess of negotiable certificates issued through June 30, 1958, be retained by the Corporation to cover certificates issued in the fiscal year 1959. Similar procedures will be followed with regard to the conservation reserve program.

Attached is a table summarizing participation in, and payments required under, the 1956, 1957, and 1958 acreage reserve programs.

Commodity Stabilization Service—Acreage reserve program, 1956–58 crops

Commodity and crop year	Signup period	Program allocations	Maximum agreements [1]	Revised estimate of program payments	Amount expended or to be expended in each fiscal year		
					1957	1958	1959
Winter wheat: [2]							
1956	About July 1 to 27, 1956						
1957	August to Oct. 5, 1957	$234,630,000	$198,692,723	$198,003,000	$145,066,017	$52,936,983	
1958	Aug. 26 to Oct. 4, 1957	79,997,100	79,997,049	79,997,049		70,000,000	$9,997,049
Spring wheat: [2]							
1956	About July 1 to 27, 1956	44,739,889	44,739,889	43,450,000	43,350,849	99,151	
1957	January to Mar. 8, 1957	33,000,000	32,158,803	31,850,000	3,300,000	28,550,000	
1958	Jan. 13 to Feb. 20, 1958	27,704,900	25,163,570	25,163,570		1,000,000	24,163,570
Cotton:							
1956	About July 1 to 27, 1956	27,336,091	27,336,091	26,465,000	26,401,094	63,906	
1957	January to Mar. 1, 1957	217,500,000	153,296,122	152,567,000	52,807,834	99,759,166	
1958	Jan. 13 to Feb. 20, 1958	289,117,000	270,480,575	270,480,575		27,061,076	243,419,499
Corn:							
1956	About July 1 to 27, 1956	179,664,064	179,664,064	170,649,500	170,034,193	615,307	
1957	Jan. 13 to Feb. 20, 1958	217,500,000	196,417,873	194,416,000	19,895,503	174,520,497	
1958	do	297,469,000	283,734,511	283,689,557		6,000,000	277,689,557
Peanuts:							
1956	About July 1 to 27, 1956	595,626	595,626	585,000	579,621	5,379	
1957							
1958							
Rice:							
1956	About July 1 to 27, 1956	1,394,294	1,394,294	1,325,000	1,310,689	14,311	
1957	January to Mar. 8, 1957	14,000,000	15,466,625	15,345,000	4,003,171	11,341,829	
1958	Jan. 13 to Mar. 7, 1958	14,500,000	11,970,308	11,970,308		600,000	11,370,308
Tobacco:							
1956	About July 1 to 27, 1956	6,633,018	6,633,018	6,250,000	6,229,042	20,958	
1957	January to Mar. 1, 1957	34,055,000	17,806,424	17,819,000	3,913,290	13,905,710	
1958	Jan. 13 to Mar. 7, 1958	28,126,000	26,560,017	26,560,017		1,000,000	25,560,017
Premiums on grains, 1956 crop				275,500	269,773	5,727	
Total:							
1956		260,362,982	260,362,982	249,000,000	248,175,261	824,739	
1957		750,685,000	613,838,570	610,000,000	228,985,815	381,014,185	
1958		736,914,000	697,906,030	697,861,076		105,661,076	592,200,000
Undistributed		13,086,000					
		750,000,000					

[1] Through May 9, 1958, for 1958 crops planted in the spring of 1958.

[2] Estimated breakdown between spring and winter wheat.

(2) The increase of $7,600,000 above the $13 million for all operating expenses provided in the budget is proposed for use by ASC county committees. The need arises primarily from the additional performance checking which will be required in the fiscal year 1959 to determine eligibility of the larger number of individual producers participating in and receiving payments under the expanded program, as compared with the number anticipated in the budget. The original estimate provided funds for checking performance on 438,260 farms and making payments to 575,000 farmers in the fiscal year 1959. Current estimates are that 936,500 farms will need to be measured and 975,000 payments made in the fiscal year 1959, or about double the original workload estimated. ASC county offices are being directed to make payments on 1958 agreements promptly on determination of performance.

The Conference Report No. 682, 85th Congress, 1st session, on the 1958 appropriation bill stated the opinion of the conferees that all payments under 1958 acreage reserve contracts should be made on or before September 15, 1958. Since the bulk of performance work will have to be done early in the fiscal year 1959, not only on the acreage reserve program, but also to complete performance work on acreage allotment and marketing quota programs, county committees will be hard pressed to do all the necessary work in the time allotted. It is expected that substantially all of the payments required will be made before September 30. Payments, of course, cannot be made where matters of compliance are not finally determined or are in an appeal stage or where violation proceedings may be involved. Experience to date does not indicate that there should be many such cases.

With the increased operating funds of $250,000 made available in the Second Supplemental Appropriation Act, 1958, and the funds contained in the regular 1958 appropriation, a special effort is being made by ASC county committees to carry out the maximum amount of work possible in the 1958 program prior to June 30, 1958. Except for winter wheat crops, it is not expected, however, that significant amounts of 1958 crops can be checked or producers' eligibility determined very far in advance of June 30. The late spring has delayed planting in many areas well beyond the normal period for such activity.

Mr. WHITTEN. You may proceed, Mr. McLain.

GENERAL STATEMENT OF THE ASSISTANT SECRETARY OF AGRICULTURE

Mr. MCLAIN. Mr. Chairman and members of the committee, the supplemental budget estimate before you provides an additional $282,800,000 for the 1958 acreage reserve program.

BACKGROUND

Before the signup started for spring crops, it was estimated that the 1958 acreage reserve program payments earned would be $485.6 million against a program authorization of $500 million. This was considered ample in view of the actual winter wheat signup of $80 million. When the signup started on January 13 for spring crops, it was evident that the program for spring crops was going to be accepted with more enthusiasm than the winter wheat program. The acreage offered, particularly for corn and cotton, was unexpectedly heavy, and in order not to exceed the program authorization, signup was temporarily suspended until steps could be taken to assure that we did not exceed the program authorization. When signup activities were resumed, in the States and counties where the acreage offered was within the program allocation, agreements were accepted. In other cases, where acreage offered was in excess of the allocation, agreements were accepted on a first-come, first-served basis up to the amount of the allocation. Those producers who filed agreements after the allocations were exhausted were placed on a register to be given consideration if and when additional authorization became

available. The Second Supplemental Appropriation Act for 1958, approved March 28, increased the program authorization from $500 million to $750 million.

ACREAGE OFFERED

As of March 7, producers offered 18.2 million acres from their allotments for wheat, corn, cotton, rice, and tobacco. The payments on this acreage would have amounted to $740.6 million. The offerings, however, except for winter wheat, were not final. The deadline for filing agreements for corn, cotton, and winter wheat was February 20 and March 7 for tobacco and rice, except that in Texas and California, where rice allotments are made on a producer basis, agreements could be filed through April 30. Producers of corn, cotton, and spring wheat also were given the right to request downward adjustments or cancel the agreements offered through March 28. As soon as the program authorization was increased to $750 million, producers on the waiting-list register were notified that additional program authorization was available and were told that an agreement could be made on the acreage previously offered. In addition, it was possible for certain other producers, who could establish by certification that they made an attempt to participate, to file an application.

As a result of the authority to cancel or reduce downward the acreage previously offered, the offers decreased after March 7 from $740.6 million to about $698 million.

BASIS OF ESTIMATE

The estimate is based on information as of May 9, and is about the same as the latest information in the report of May 16. Based on current data, producers have agreed to take 17.2 million acres from production of acreage-allotment crops and put them in the acreage reserve. This will require payments of $697.9 million, of which $105.7 million will be paid from funds available in the fiscal year 1958, and $317 million from the funds provided in the Department of Agriculture Appropriation Act for the fiscal year 1959. The balance required of $275.2 million is included in this estimate.

The estimate also includes an additional $7.6 million for the ASC county committees, making a total of $16,019,000 available for county operations. The need arises primarily from the additional performance checking which will be required. The original estimate provided funds for checking 438,260 farms and making payments to 575,000 producers in the fiscal year 1959. The current estimates are that 936,500 farms will need to be measured and payments to 975,000 producers during the fiscal year 1959. This is about double the original workload estimated.

Last year's conference report on the 1958 appropriation stated that all payments on the 1958 program should be made before September 15. Payments on the 1958 agreements will be made as promptly as performance can be determined. It has been completed for winter wheat and has started on the spring crops. The bulk of performance work will be done early in the fiscal year 1959, not only for the acreage-reserve program, but also for acreage allotments and marketing quota programs. ASC county committees are going to be hard pressed to

do the necessary work in the time allotted. It is expected that the bulk of the payments will be made by the end of August and that substantially all payments will be made before September 30. Payments, of course, cannot be made where matters of compliance are not finally determined or are in an appeal stage or where violation proceedings may be involved.

ADVANCES TO COMMODITY CREDIT CORPORATION

Under current procedures, program funds are advanced to the Commodity Credit Corporation periodically in amounts estimated to be required to cover negotiable certificates to be issued to producers by ASC county offices. Funds advanced are expenditures under the appropriation "Acreage reserve program." Allocations are issued to ASC offices limiting the issuance of certificates to amounts advanced to the Corporation. For various reasons, ASC offices may not be able to issue, before June 30, 1958, certificates equal to allocations. If amounts equal to such unused allocations were withdrawn from the Corporation and returned to the appropriation, this proposed supplemental appropriation would probably be inadequate. In order to keep the amount of the supplemental to the minimum, it is therefore necessary that funds advanced to CCC in the fiscal year 1958 in excess of negotiable certificates issued through June 30, 1958, be retained by the Corporation to cover certificates issued in the fiscal year 1959. Similar procedures will be followed with regard to the conservation reserve program.

Mr. Chairman, that briefly summarizes our request. We will be glad to discuss these matters more fully or answer any questions, to the best of our ability.

PROGRAM PAYMENTS AND FUNDS APPROPRIATED

Mr. WHITTEN. Mr. McLain, the staff of the committee has prepared a table showing the amount of program payments and the money that has been appropriated for 1956, 1957, and 1958, which totals $1,645,858,415, leaving the balance that you request today of $282,800,000. I would like to have that table included in the record just preceding our discussion.

(The material referred to follows:)

Program payments:	
1956 program	$249,000,000
1957 program	610,000,000
1958 program	697,861,076
Total	1,556,861,076
Operating expenses (fiscal years 1957, 1958, 1959)	88,997,339
Total cost of program	1,645,858,415
Funds provided:	
Second supplemental 1958 (reimbursements CCC)	510,808,415
Second supplemental 1958 (administrative expenses ARP)	250,000
1958 regular bill	522,000,000
1959 regular bill	330,000,000
Total funds to date	1,363,058,415
Balance due	282,800,000

Mr. WHITTEN. This program will end in the present calendar year and the recommendations of the Secretary and the Department of Agriculture on this are concurred in by the Congress. That is correct, is it not?

Mr. MCLAIN. That is correct.

PROPOSED ACREAGE RESERVE LEGISLATION

Mr. WHITTEN. I have always tried not to use this committee as a means of promoting legislation which I introduced myself; but I think it well here to get the benefit of your advice on a bill which I did introduce. The number of that bill is H. R. 12003. Without objection we will place a copy of the bill in the record.

(The bill is as follows:)

[H. R. 12003, 85th Cong., 2d sess.]

A BILL To authorize the sale and transfer of acreage allotments and marketing quotas, and for other purposes

Whereas the removal of small farms from production in many areas has hurt business activity in local communities and will work against efforts to establish stable economic units; and

Whereas it is essential to a proper operation of the farm program and to providing a consistent supply of farm products to meet domestic demand and to protect the Unied States share of foreign markets that, when acreage allotments and marketing quotas are determined, such acreage be planted, therefore

Be it enacted by the Senate and House of Representatives of the United States of America in Congress assembled, That hereafter, notwithstanding any other provision of law, any farmer may sell and transfer, on such terms and conditions as may be agreed upon by the parties, his acreage allotment and marketing quota to any other farmer for use in the county or county area where such allotment has been made.

No such contract shall be enforcible until a copy has been filed with the agricultural stabilization and conservation committee of the county in which such allotment was made, and when a copy of such contract is filed with such county committee it shall have the effect of transferring such acreage allotment and marketing quota from one farm to the other. Such sale and transfer shall not affect the acreage allotment and marketing quota of the farm or farms from which sold or the farm or farms to which sold, except during the one year in which sold. Neither shall it affect the permanent acreage allotment or marketing quota history of either farm.

Mr. WHITTEN. Recognizing that in 3 years many small farmers have virtually been out of business in the basic crops—those under the acreage-reserve program—and recognizing that it is doubtful that they could very well go back into business since their equipment is gone, and yet being dependent on it, I introduced a bill which would authorize the holders of acreage allotments to sell such acreage to other parties as would be agreeable to the parties, which would be binding on the Government, once the transfer between these private individuals was filed with the local committee.

In line with the belief of the Secretary that the small farm is uneconomical from certain points, that bill would enable them to get some relief from the acreage allotment they already have. Secondly, such a measure would enable the local counties to have some degree of business activity in their areas. Thirdly, it would enable a man who owns a farm but whose allotment is too small to add acreage enough by purchase to make that an economic activity.

Mr. MCLAIN. Yes, sir; and we have had something of the same nature in mind.

Mr. WHITTEN. Earlier I introduced a bill, H. R. 10168, on this subject. At that time it looked like it would be impossible to get money from the Congress for this over-signup for acreage reserve.

At that time the Department filed its objection to the bill primarily because it would have created too much workload for the Department. To obviate the objections of the Department insofar as I could, I introduced a second bill.

The second bill which I introduced was one which has come to your office.

Mr. MCLAIN. I do not believe we have made a report on it yet. As I understand this second one, you changed the time making it a 1-year proposition.

Mr. WHITTEN. That is right.

Mr. MCLAIN. I think there is some merit in your general approach to what you are talking about here, if you got it on a permanent basis. I doubt whether there is much merit in it as you have it in the bill, on a per annum basis.

Mr. WHITTEN. I do not mean to take up the committee's time, but I would like to point out to you the reason for doing it as I did. In the first place, acreage allotments may go up and down in value from one year to another, so you might have a changing picture from year to year as to the worth of it. Secondly, I think this would make it highly questionable as to whether you should do it on a permanent basis. If you should find a wealthy man in my district—if you could find such a person—you would find a man who might buy enough acreage to plant 100 percent of his land. He cannot afford to buy where it would be sold on a 1-, 2-, 3-, or as much as 5-year basis. But if you were to permit another farmer who might have money and adds them to his farm permanently, he would create great dislocation. On acreage reserve you held the sign up to 1 year.

Mr. MCLAIN. We were severely criticized for it.

Mr. WHITTEN. You are severely criticized by some and always will be. I mention this here because the danger in the permanent transfer would far outweigh this other problem.

Mr. MCLAIN. I was taking it at face value that you wanted these small acreages into more economic units.

Mr. WHITTEN. I do not want to say that. I want to make it possible for that small farmer who prefers to do so, to sell his allotment. I want to make it possible for the man to sell it for a year.

I am trying to bring it about. You are going to have, and Congress is going to see a terrific pressure for an acreage program again. They have had it for 3 years. My proposal would enable the farmer to sell it and at least get some return for it.

Mr. MCLAIN. We can well understand your concern for the ordinary farmers. We would much rather have it apply to all of them.

Mr. WHITTEN. Let me say this—I would not mean to limit it to one commodity or one county. Certainly, it would be unsound for my farmers in my district to have all the cotton producing farms, and the people in the adjoining congressional district not have any. That would be unsound, so the interest I would have is in keeping the business in an area within that area, thus the sale would be limited to the county.

Mr. MCLAIN. I am saying very frankly that there would be a tremendously interesting proposition.

Mr. WHITTEN. This would provide that where you have a farm already and have an acreage allotment, you could buy an additional acreage allotment and farm it without additional expense, beyond the purchase price. The man who has a farm would have an opportunity to bring together enough allotments to make it a profitable operation.

Mr. MCLAIN. You are not really selling them. You are just leasing them. If you were selling them, it would be permanent.

Mr. WHITTEN. If I just have the land rented this year, that is a 1-year deal, as far as the acreage allotment is concerned. When I sell it, it is gone from me forever. One way it is a sale. I think technically it is a sale. Where I sell him that right to plant cotton, and he moves it from my farm in one county to his farm in such county, I would say that is a sale. I believe that is all I have on the acreage reserve. I do have a few questions on conservation reserve, but I believe I would rather pass the witness for other questions on the conservation reserve before we get to that.

Mr. Marshall.

PAYMENTS UNDER 1958 PROGRAM

Mr. MARSHALL. As I understand it, the Congress has previously authorized $750 million. Now, you have your contracts signed, and your contracts point out that you will need $698 million, so all this item now is to take care of the contracts that are signed, that are an obligation of the Government at the present time.

Mr. MCLAIN. That is right.

Mr. MARSHALL. And I notice in your statement that you say you expect to have some difficulty in getting substantially all payments made before September 30. Is the Department asking for anything, any extension, beyond that date?

Mr. MCLAIN. No, we are just pointing out——

Mr. WHITTEN. May I interrupt to say that that directive was not law. If you recall, we did not want to get into the realm of politics just before election time. I will say for the record that we appreciate it.

Mr. MCLAIN. We are just as anxious to pay the bills as soon as we can.

Mr. MARSHALL. I appreciate the effort you are making in trying to get these payments as early as possible because I do think it does help considerable as far as any political implication is concerned. I just wanted to clear the matter up because I did not think that there should be any point made that it you did not get the payments out before September 30, that you would be precluded from making them later.

Mr. MCLAIN. No, I just wanted to point out that we would like to get them done as soon as possible.

EFFECT OF ACREAGE RESERVE PROGRAM ON CCC

Mr. ANDERSEN. Mr. McLain, earlier I remember your observation that much less production resulted as a result of the acreage and conservation programs to date, and I wish if you would that you would place in the hearings at this point a very short summary of how much

less stocks you think the Commodity Credit Corporation owns today or will own next fall after this crop year as a result of the operation of these two programs to date. Would you do that, please?

Mr. McLain. We would be glad to do that.

(The information requested follows:)

Acreage reserve program: Estimated reductions in total production and CCC acquisition from levels which would have applied with no program

Commodity	Reduction in production [1]				Reduction in CCC acquisitions			
	1956	1957	1958 [2]	Total	1956	1957	1958	Total
Corn (million bushels) [3]	112.50	329	388	829.50	(4)	(4)	(4)	(4)
Cotton (million bales)	.25	2	3	5.25	(4)	(4)	(4)	(4)
Rice (million bags)	.45	6	5	11.45	(4)	(4)	(4)	(4)
Tobacco (million pounds)	25.00	93	126	244.00	(4)	(4)	(4)	(4)
Wheat (million bushels)	27.50	175	108	310.50	(4)	(4)	(4)	(4)

[1] Reductions in production cannot be compared with the previous year or any prior base years. They relate principally to the acreage taken out of production and the yield that would have been harvested on such acreage considering the crop conditions that year.

[2] Since it is too early to forecast 1958 crop yields this estimate for 1958 is based on yields in recent years.

[3] Reduction in production for corn for 1957 is composed of 220 million bushels on the designated reserve acres plus 109 million bushels diversion from normal down to the allotment. No payment is made for the latter amount, either for corn acreage reserve participating farms or farms having acreage reserve agreements for other commodities which compel them to comply with their corn allotments. The comparablebreakdown of the 1958 reduction in production is 284 and 104 million bushels respectively. This is not a significant item for 1956 because corn bases were in effect at a level nearly equal to normal. It does not apply to other commodities because marketing quotas keep the normal acreage at the allotment level.

[4] Assumed to be equal to reduction in production.

We know of no way of estimating similar data for the conservation reserve for these reasons:

1. The acreage reserve reduces the effective allotment for a specific commodity whereas the conservation reserve allows the farmer to actually increase some crops as long as he reduces in the aggregate.

2. The conservation reserve participants may reduce corn one year, barley next year, and cowpeas the third year; hence no statistics are obtainable except at prohibitive cost.

3. The conservation reserve probably has not reduced tobacco nor rice. It may have reduced cotton and peanuts slightly. It undoubtedly has had considerable effect on such price supported items as flaxseed, corn, soybeans, small grains, cheese, butterfat, dry milk, and honey, but none of these assumptions can be demonstrated by available statistics.

Mr. Horan. Do I understand that this acreage reserve supplemental request is due to a greater signup on cotton and corn?

Mr. McLain. This estimate of $282,800,000 results primarily from the increased authorization of the program to provide for the heavy signup in cotton and corn.

Mr. Andersen. Off the record.

(Discussion off the record.)

FINDINGS IN INFORMATION BULLETIN NO. 180

Mr. Whitten. Without objection, and at Mr. Horan's suggestion, we will be pleased to have included in this record at this point some of the findings in Information Bulletin No. 180, which deals with economic units.

(The material referred to follows:)

Farming systems with budgeted $2,500 and $3,500 operator earnings, selected areas [1]

COTTON-BEEF FARMS, PIEDMONT, S. C.

Item	Farm A: $2,500 operator earnings [2]	Farm B: $3,500 operator earnings [2]
Land use:	*Acres*	*Acres*
Cropland	69	69
Pasture [3]	35	63
Woods and other	43	60
All land	147	192
Cropland use:		
Cotton	15	15
Grain sorghum	(15)	(15)
Wheat	15	15
Oats	39	39
Crimson cloverseed	(9)	(9)
Lespedeza	(24)	(24)
Livestock and poultry:	*Number*	*Number*
Cows	35	58
Yearlings	3	6
Calves	32	53
Bulls	1	2
Total cattle	71	119
Hogs	2	2
Hens	25	25

DAIRY-COTTON FARMS, WESTERN TENNESSEE

	Grade B dairy-cotton farm, $2,500 operator earnings	Grade A dairy-cotton farm, $3,500 operator earnings
Land use:	*Acres*	*Acres*
Cropland	80	75
Pasture (permanent)	42	42
Other land	16	16
All land	138	133
Cropland use:		
Cotton	15	13
Corn (grain)	18	18
Soybeans	17	17
Alfalfa (hay)	16	16
Lespedeza (pasture)	10	10
Garden	1	1
Livestock and poultry:	*Number*	*Number*
Milk cows	20	20
Other cattle	10	10
Total cattle	30	30
Hogs	42	42
Hens	60	60

See footnotes at end of table, p. 729.

Farming systems with budgeted $2,500 and $3,500 operator earnings, selected areas—Continued

COTTON FARMS, EASTERN OKLAHOMA

Item	Farm A: $2,500 operator earnings [2]	Farm B: $3,500 operator earnings [2]
Land use:	*Acres*	*Acres*
Cropland	155	205
Pasture	25	25
Other land	20	20
All land	200	250
Cropland use:		
Cotton	93	93
Oats and sweetclover	31	41
Sweetclover	31	41
Grain sorghum	----------	30
Livestock and poultry:	*Number*	*Number*
Milk cows	2	2
Hens	50	50

DAIRY FARMS, EASTERN WISCONSIN

Land use:	*Acres*	*Acres*
Cropland	90	120.0
Pastureland (improved pastureland)	40	50.0
Other land	30	30.0
All land	160	200.0
Cropland use:		
Corn (grain)	12	14.5
Corn (silage)	18	24.5
Hay (alfalfa)	30	40.0
Oats	15	20.0
Rotation pasture [4]	15	20.0
Livestock:	*Number*	*Number*
Milk cows	30	40.0
Young stock	20	24.0

WHEAT-BEEF FARMS, CENTRAL PLAINS, KANSAS

Land use:	*Acres*	*Acres*
Cropland	581	733
Native pasture	120	200
Other land	19	27
All land	720	960
Cropland use:		
Summer fallow	210	265
Wheat:		
Planted	210	265
Harvested	170	215
Grain sorghum (on abandoned wheat):		
Planted	(40)	(50)
Harvested	(29)	(37)
Grain sorghum (on wheat stubble):		
Planted	131	163
Harvested	101	126
Sorghum silage:		
Planted	27	37
Harvested	22	31
Idle	3	3
Grazing:		
Wheat	(170)	(215)
Sorghum stubble	(130)	(200)
	Number	*Number*
Livestock: Steer calves for winter feeding	75	108

See footnotes at end of table, p. 729.

Farming systems with budgeted $2,500 and $3,500 operator earnings, selected areas—Continued

WHEAT FARMS, JUDITH BASIN, MONT.

	Acres	*Acres*
Land use:		
Cropland	826	1,134
Pasture		
Other land	32	46
All land	858	1,180
Cropland use:		
Fallow	413	567
Winter wheat	372	511
Spring wheat [5]	41	56

[1] Based on projected long-term normal price and cost rates, without acreage allotments or soil bank participation, and with 1955 land values. Annual capital charge made at rate of 4½ percent of total investment.
[2] Parentheses indicate double cropping after small grains.
[3] Improved pasture consisting of Coastal Bermuda topseeded with crimson clover.
[4] 2 years corn, 3 years alfalfa seeded with oats and pastured 1st year, and 2 years hay.
[5] 10 percent of winter wheat seeded abandoned and reseeded to spring wheat.

Eastern Oklahoma.—In the upland prairie area of eastern Oklahoma, a predominantly cotton-farming system was used in budgeting farms for $2,500 and $3,500 operator earnings. The upland prairie soil in this area is one of the most favorable sections in the eastern half of the State from the standpoint of cotton production potential. In this area, crop yields have improved in recent years, even under drought conditions.

Farm A, with budgeted operator earnings of $2,500, was a 200-acre unit as compared with 250 acres for farm B with $3,500 operator earnings. Farm A included 155 acres of cropland—93 in cotton, 31 in oats and first-year sweetclover, and 31 in second-year sweetclover. Farm B included 205 acres of cropland—93 in cotton, 41 in oats and first-year sweetclover, 41 in second-year sweetclover, and 30 in grain sorghum.

SIGNUP FOR ACREAGE RESERVE PROGRAM, 1958

Mr. HORAN. May I ask what is the signup by States that is involved in this request?

Mr. MCLAIN. It would have to be made a memorandum, Mr. Horan, and furnished later. We can furnish it by States, by crops.

Mr. HORAN. I think it would be well to have something as to the demand on a national basis, and I would also like to have some information given as to the demand by commodities.

Mr. BEACH. We can put in the record a statement showing the signup in the 1958 program by commodities, and by States, if that would be satisfactory.

(The material referred to follows:)

Wheat: 1958 acreage reserve program—Report of participation indicated through May 9, 1958

State	Agreements and waiting lists		
	Farms (estimated) (1)	Acres (estimated) (2)	Funds required (3)
Alabama			
Arkansas	357	4,567	$105,534
California	705	44,545	1,045,785
Colorado	3,530	318,786	4,959,144
Delaware	110	2,144	56,905
Florida			
Georgia	5,337	55,316	1,235,055
Idaho	2,174	79,583	2,608,598
Illinois	3,630	60,446	1,888,046
Indiana	5,536	69,119	2,100,660
Iowa	413	9,494	244,011
Kansas	16,219	703,308	14,944,631
Kentucky	3,413	38,886	963,586
Maryland	765	12,028	323,493
Michigan	9,821	121,749	4,028,123
Minnesota	5,397	113,233	2,439,502
Missouri	14,435	249,818	7,451,923
Montana	3,024	219,122	4,205,234
Nebraska	5,115	128,309	3,225,564
New Jersey	520	7,837	260,706
New Mexico	828	111,322	1,068,514
New York	5,734	75,426	2,824,478
North Carolina	11,128	85,202	2,187,817
North Dakota	11,949	692,297	11,160,344
Ohio	12,716	151,318	4,558,485
Oklahoma	12,276	647,136	9,943,744
Oregon	1,247	36,010	1,128,444
Pennsylvania	5,457	49,511	1,429,029
South Carolina	6,895	57,038	1,365,945
South Dakota	6,654	346,902	4,611,215
Tennessee	3,325	37,461	824,700
Texas	8,606	599,980	7,879,758
Utah	1,342	55,174	1,112,638
Virginia	3,510	35,333	994,548
Washington	1,028	35,275	1,173,231
West Virginia	328	2,919	78,154
Wisconsin	557	4,667	145,855
Wyoming	573	30,403	587,220
Total	174,654	5,291,664	105,160,619

Source: CSS, Soil Bank Division, May 14, 1958.

Corn: 1958 acreage reserve program; report of participation indicated through May 9, 1958

State	Agreements and waiting lists		
	Farms (estimated) (1)	Acres (estimated) (2)	Funds required (3)
Alabama	16,758	188,632	$5,170,331
Arkansas	2,124	15,700	386,372
California			
Colorado			
Delaware	1,628	80,292	1,453,167
Florida	1,206	20,849	490,629
Georgia	6,269	119,926	2,532,600
Idaho			
Illinois	28,789	595,156	30,157,412
Indiana	31,586	520,833	27,273,961
Iowa	39,109	1,010,450	49,863,868
Kansas	10,998	265,561	7,467,460
Kentucky	23,320	295,302	11,706,648
Maryland	2,544	48,571	2,079,272
Michigan	19,193	242,313	11,899,578
Minnesota	21,914	434,224	18,583,049
Missouri	39,623	826,865	34,075,425
Montana			
Nebraska	25,406	818,998	24,891,322
New Jersey	1,880	30,642	1,768,741
New Mexico			
New York			
North Carolina	12,607	116,492	4,415,359
North Dakota	501	11,477	273,827
Ohio	27,132	369,615	21,093,196
Oklahoma			
Oregon			
Pennsylvania	6,219	66,671	3,482,716
South Carolina	768	5,200	145,877
South Dakota	8,488	283,716	8,176,107
Tennessee	13,621	146,368	4,959,852
Texas			
Utah			
Virginia	1,984	26,505	1,225,873
Washington			
West Virginia	113	1,717	78,581
Wisconsin	14,304	196,719	10,613,788
Wyoming			
Total	378,086	6,683,714	283,734,511

Source: CSS, Soil Bank Division, May 14, 1958.

Cotton: 1958 acreage reserve program, report of participation indicated through May 9, 1958

State	Agreements and waiting lists		
	Farms (estimated) (1)	Acres (estimated) (2)	Funds required (3)
Alabama	64,817	467,944	$30,435,286
Arizona	1,033	16,712	2,337,529
Arkansas	27,662	317,527	20,319,820
California	4,097	49,519	5,244,222
Florida	3,752	18,858	1,114,110
Georgia	51,652	480,304	29,183,240
Illinois	79	575	31,268
Kansas	1	4	114
Kentucky	631	1,983	159,620
Louisiana	21,638	208,404	15,903,603
Maryland	1	13	700
Mississippi	58,633	473,114	35,170,767
Missouri	5,364	71,519	5,229,805
Nevada	2	52	5,132
New Mexico	1,221	18,999	1,994,365
North Carolina	36,567	196,480	13,490,794
Oklahoma	24,654	363,132	12,706,543
South Carolina	42,910	355,534	23,701,933
Tennessee	22,823	152,422	11,038,579
Texas	75,899	1,732,970	62,039,957
Virginia	1,743	5,513	373,188
Total	445,179	4,931,578	270,480,575

Source: CSS, Soil Bank Division, May 14, 1958.

Rice: 1958 acreage reserve program—Report of participation indicated through May 9, 1958

State	Agreements and waiting lists		
	Farms (estimated) (1)	Acres (estimated) (2)	Funds required (3)
Alabama			
Arizona			
Arkansas	2,155	53,345	$3,635,437
California	748	31,505	2,500,588
Florida	4	325	10,628
Georgia			
Illinois	1	20	1,540
Kansas			
Kentucky			
Louisiana	1,860	46,939	2,934,700
Maryland			
Mississippi	103	4,276	273,731
Missouri	34	897	60,294
Nevada			
New Mexico			
North Carolina			
Oklahoma	1	53	3,000
South Carolina	17	957	36,080
Tennessee	5	270	21,252
Texas	667	36,075	2,493,058
Virginia			
Total	5.595	174,662	11,970,308

Source: CSS, Soil Bank Division, May 14, 1958.

Tobacco (flue-cured, fire-cured, Burley and Maryland) 1958 acreage reserve program: participation through May 9, 1958

FLUE-CURED, TYPES 11-14

State	Agreements and waiting lists		
	Farms (estimated) (1)	Acres (estimated) (2)	Funds required (3)
Alabama	135	234	$47,960
Florida	1,920	3,581	887,697
Georgia	7,362	13,399	3,158,508
North Carolina	17,948	36,859	9,385,077
South Carolina	4,586	6,210	1,627,732
Virginia	2,999	6,145	1,581,135
Total	34,950	66,428	16,688,109

FIRE-CURED, TYPE 21

Virginia	1,313	1,326	$230,624

FIRE-CURED, TYPES 22-23

Illinois			
Kentucky	2,914	4,158	$696,482
Tennessee	2,177	3,181	558,842
Total	5,091	7,339	1,255,324

BURLEY, TYPE 31

Alabama	10	5	$1,320
Arkansas	52	38	9,418
Georgia	85	38	10,293
Illinois			
Indiana	695	732	114,964
Kansas	23	48	11,483
Kentucky	5,880	4,041	1,076,072
Missouri	380	436	113,522
North Carolina	1,397	611	212,667
Ohio	966	579	167,684
Pennsylvania			
South Carolina	4	2	387
Tennessee	5,963	3,203	834,863
Texas	2	(1)	150
Virginia	661	321	107,739
West Virginia	587	346	102,668
Total	16,705	10,400	2,763,230

MARYLAND, TYPE 32

Delaware			
Maryland	1,935	9,440	$1,415,221
Virginia	37	19	2,979
Total	1,972	9,459	1,418,200

[1] Less than 0.5 acre.

Source: CSS, Soil Bank Division, May 14, 1958.

Tobacco (dark air-cured and cigar types) 1958 acreage reserve program: Participation through May 9, 1958

DARK AIR-CURED, TYPES 35-36

State	Agreements and waiting lists		
	Farms (estimated) (1)	Acres (estimated) (2)	Funds required (3)
Indiana	19	8	$1,395
Kentucky	3,597	1,921	320,150
Tennessee	409	153	28,173
Total	4,025	2,082	349,718

VIRGINIA SUN-CURED, TYPE 37

Virginia	1,410	2,253	$324,301

CIGAR FILLER, TYPES 42-44

Ohio	210	633	$93,754
Pennsylvania			
Total	210	633	93,754

CIGAR BINDER, TYPE 51

Connecticut	971	4,301	$1,510,348
Massachusetts	2	10	3,969
Total	973	4,311	1,514,317

CIGAR BINDER, TYPE 52

Connecticut	264	899	$316,762
Massachusetts	917	3,073	1,165,992
New Hampshire	1	1	279
New York			
Vermont	1	6	2,081
Total	1,183	3,979	1,485,114

CIGAR BINDER, TYPE 54

Illinois			
Indiana			
Wisconsin	181	509	$72,355
Total	181	509	72,355

CIGAR BINDER, TYPE 55

Iowa	1	1	$133
Minnesota	35	84	15,185
Wisconsin	927	2,106	349,653
Total	963	2,191	364,971
All types	68,976	110,910	26,560,017

Source: CSS, Soil Bank Division, May 14, 1958.

VALUE OF ACREAGE ALLOTMENTS

Mr. HORAN. I almost hate to raise this question, but for several years now, we have made the observation that allotments were more valuable than land in today's farm economy.

This tends to throw the focus on that statement. Have you any comment to make regarding that?

Mr. MCLAIN. Allotments are very important with several commodities, Mr. Horan, mostly with tobacco. That is the best example of how important they are.

Mr. HORAN. You know that the value of the tobacco allotment far exceeds the value of the tobacco land in many instances several times over, and in these markets where we have tobacco acreage allotments with them, the getting of an allotment is very important.

One of the things that happens under this circumstance is that we tend to freeze the allotment in the area where it has been, regardless of where new developments might otherwise move it out of that area.

Of course, there are arguments on both sides of that one, as we all know, particularly on cotton, but certainly allotments today have great value.

I am encouraged to investigate that because, as you know, undoubtedly, we have summer fallow wheat, and they farm half of the land each succeeding year and right now, some of my counties are very much concerned about the move of the railroads to meet the competition of trucks, and some of these summer fallow areas, they are very fearful that that reduction will be merely reflected in lower movement, which does not seem fair.

Mr. MCLAIN. We have had long talks with them out there, and Mr. Berger would be glad to discuss that with you because we have had all interested parties in here, and we hope we are going to be able to solve this to your satisfaction.

(Discussion off the record.)

Mr. HORAN. As I understand it, the action of the Congress virtually terminated the acreage-reserve program, and this is merely a mopup operation.

That is to take care of the added signup we had and the obligations involved in the law that Congress passed some years ago.

Mr. MCLAIN. That is right.

Mr. HORAN. So all we are doing is taking care of this crop year, which was brought about by the action of the Congress?

Mr. MCLAIN. Yes, sir.

Mr. HORAN. That is all, Mr. Chairman.

AVAILABILITY OF LATEST ESTIMATES

Mr. WHITTEN. One other question—of course, this is the best information we have at this point. As you pointed out, you have not been able yet to complete all the checkups to see how many contracts have not been fully carried out. It should be 2 or 3 weeks before we report the supplemental bill, and if the Senate were to take several more weeks, you could perhaps have more accurate information than you have now; could you not?

Mr. McLain. We want to give you the best information we have.

Mr. Whitten. But it does mean that it might be sound to be in touch with the Department at the last available minute, because the picture will have unfolded to a better degree by then.

Mr. Doggett. Mr. Chairman, there is one point here that I hope you do not overlook, and that is that we now have in the regular appropriation bill some $317 million for payment after July 1 in the fiscal year 1959. This is a supplemental to that, of course, and we are going to have our county committees in the position of having about half of the funds that they need to complete their acreage reserve settlements. If we do that, some of them object very violently to issuing any certificates, so if this is delayed until August 1, you see what we are up against.

Mr. Whitten. May I say here that there is certainly no disposition on the part of this subcommittee to delay this.

What the Senate does is, of course, beyond the control of this committee. But at the last minute before your bill is passed the information should be much better. I hope it will not be delayed, but it is a matter beyond the control of this subcommittee.

Mr. McLain. Of course, the longer this is delayed, the less apt we are to get these payments made by September 30.

Mr. Whitten. I know that, and you know sometimes you like to have somebody help share the blame. In that respect you have the Congress to help you.

AVERAGE PAYMENT RATES FOR CONSERVATION RESERVE PROGRAM

I now turn to your announcement of June 11, 1958, in which I notice in the third paragraph, the suggested acreage payment rate for the States based on an average of $13.50.

At this point I would like to have included in the record the language in the appropriation bill for 1958 which attempts to bring the rates in line with the value of the land and the productive capacity of it.

(The language follows:)

Provided further, That hereafter no conservation reserve contract shall be entered into which provides for (1) payments for conservation practices in excess of the average rate for comparable practices under the agricultural conservation program, or (2) annual rental payments in excess of 20 percent of the value of the land placed under contract, such value to be determined without regard to physical improvements thereon or geographic location thereof. In determining the value of the land for this purpose, the county committee shall take into consideration the estimate of the landowner or operator as to the value of such land as well as his certificate as to the production history and productivity of such land.

Mr. Whitten. When was this determination made, prior to the action of the Appropriations Committees of the House and the Senate?

Mr. McLain. No, sir. This was made just before this went out. This visualizes our getting the land that is above the caliber of the land that we have had in the past programs. That is spelled out in the language.

Mr. Whitten. If you raise this rate of pay, then it does not mean that you are ignoring the intent of the Congress as shown in the bill?

Mr. McLain. Quite to the contrary. We are trying to get a little better rate. As we have been seeking to get the program to work, we have been convinced that that was necessary.

Mr. ANDERSEN. Mr. Chairman, may I say this: Raising the overall average from $10 up to some point more in keeping with getting good productive land out of production is what is needed.

Personally, I feel that the $13.50 is too little. I would like to see about a $16 average so that good-quality land, say in South Dakota and Minnesota, could go into the conservation reserve. I feel it is absolutely necessary to put that in if we are to get the full value of this program.

Mr. WHITTEN. That feeling on your part and the Department's part must be consistent with the action of Congress that they shall consider the value of the land and its productivity.

Mr. ANDERSEN. I agree with you entirely on that point, Mr. Chairman.

Mr. WHITTEN. If, on the other hand, you get the same caliber of land, despite the investigators' reports and the actions of Congress, I would say that it would not be appropriate at all. So the question then resolves itself to whether you get better land if you stick to those two guide rules as included in the report.

It is my understanding that you expect to abide by those.

Mr. MCLAIN. That is right, Mr. Chairman.

Mr. WHITTEN. I might include the House committee report on this subject in the record at this point, so as to show the reasons for our action.

(The material referred to follows:)

EXTRACT FROM HOUSE OF REPRESENTATIVES REPORT NO. 1584 ON THE 1959 AGRICULTURAL APPROPRIATION BILL

The investigation report referred to earlier also indicates that, in some areas, the rent paid under this program by the Government will reimburse the participant for the full value of the land in about 3 years. Numerous examples are cited, also, of the division of land among families, relatives and others for the purpose of getting around the limitation of $5,000 on the amount which may be paid any one participant. In one case the payments ran as high as $48,920.

In order to put this program on a more sound basis, and in order to keep it in line with other conservation programs of the Department, the committee has included language in the bill which will limit the rate of payment in any one year to 20 percent of the value of the land and will prohibit payments to participants who illegally divide their land to increase their payments. The proposed language will also make the Federal share of payments for conservation practices comparable to rates established for the agricultural conservation program.

Mr. WHITTEN. May I say this, based on past experience with the Department, where we raise your request in the budget plus, your performance, your estimates have been about 100 percent in advance of what you came up with. By raising this it is hoped you will not only get a lot of money, but that you hope to get better land.

Mr. MCLAIN. We want to get better land, but not get rid of more money. We have had indication from many, many areas, that the rates just were not attractive enough to do the job.

We feel the plan should have a fair trial, and it has not had that yet.

Mr. WHITTEN. I feel it would be well to put in the record at this time any reports that may have been sent out to any state officers or county officers in connection with the conservation program relative to rates and various other things in determining values of land and so on.

(The material requested follows:)

The Department is devising questionnaires and instructions implementing the recent legislation prohibiting new contracts at rates exceeding 20 percent of the land value. These instructions have not yet been approved or released.

Mr. McLain. Mr. Chairman, we only want to be sure that we get value received for the money spent, and I am sure we are in agreement with you in regard to the rate you have suggested. It will enable us to put thousands of acres of good, productive land out of production, and into a soil bank, and that in itself will be good under present circumstances for the taxpayers involved, but I do want to say that there is, after all, no difference between the stand taken by Mr. Whitten on the one hand and you and I and the Department on the other in this particular matter.

It is just simply a difference perhaps in the way in which it has been stated.

Mr. Whitten. May I take it then that your $13.50 means an authorization?

Mr. McLain. Let me refer you, Mr. Chairman, to the next to the last paragraph in the news release of June 11, 1958.

Mr. Whitten. Yes; we will include the entire release in the record.

(The above-mentioned document follows:)

United States Department of Agriculture,
Washington, June 11, 1958.

Tentative Goals and Average Rates for 1959 Conservation Reserve Sent to States

Tentative State acreage goals and average State per-acre payment rates for participation in the conservation reserve of the soil bank, for contracts beginning with the 1959 crop year, are currently being sent to the field for consideration and recommendation by State agricultural stabilization and conservation (ASC) committees, the United States Department of Agriculture reported today.

The proposed State goals make up a tentative national conservation reserve goal of 12.5 million acres, to be added in 1959 to the 10.4 million acres signed under contracts in previous years. The State goals may be adjusted after recommendations based on analysis of local situations are received from the State committees.

The suggested average payment rates for the States are based on a national average rate of $13.50 per acre. This compares with an announced national average payment of $10 per acre during the past 2 years of the program. The new higher rate should cause land of higher average productivity to be put in the conservation reserve, so that the payments per unit of productivity may not be increased over the payments in the contracts of the past 2 years.

State ASC committees are being asked to study the proposed 1959 rates and goals in relation to the local situation. Some adjustments in State rates may be made on the basis of recommendations after these studies, within the $13.50 national average.

These new rates will apply to land placed in the conservation reserve beginning in 1959. Rates established for land placed in the conservation reserve in previous years will remain unchanged.

When the average State rates are determined finally, State ASC committees will determine an average rate for each county. These county rates may vary above or below the State average, primarily on the basis of relative productivity, rental rates, and agricultural land values.

County ASC committees will then determine a maximum regular payment rate for each farm when the operator expresses an interest in taking part in the program. These individual farm maximum rates may vary above or below the county average, again primarily on the basis of relative productivity, rental rates, and agricultural land values.

The regular maximum payments may be earned by putting land into the conservation reserve which during the past 2 years has been in soil bank base crops (grains, oilseeds, and row crops).

A lower rate of per acre payments, not to exceed 50 percent of the regular maximum rate for the farm, may be earned by putting into the conservation reserve nondiversion land (principally hay and pasture land which has been harvested or has been in a regular rotation on the farm).

There will be special payment provisions under the 1959 program for those farmers who elect to put all of their eligible cropland under conservation reserve contracts. In these cases, the maximum regular rate will be available for all the acres which are in the program—both the soil bank base land and the nondiversion land. In addition, the regular rate will be increased by 10 percent for whole farm participation.

If the individual farm's regular rate happened to be the $13.50 national average, the 10-percent increase for putting the whole farm in the program would bring the applicable rate to nearly $15 an acre ($14.85).

The maximum regular rate, or the higher rate for whole farm participation, will be ceiling rates for the farm. On farms where only part of the cropland is covered, the rates would be lower if a farmer designated land for the conservation reserve which was below the average for the farm in productivity. A producer will be able to offer land at less than the regular rate if he wishes. Department officials say that in accepting offers for conservation reserve contracts the ASC committees will begin with those which offer the most acres per unit of cost. In cases where participation in the program might exhaust available funds, offers at lower than maximum rates would be more certain of acceptance. Also, in counties where more land is offered than it is desirable to contract in 1 year, any limit placed on the number of acres accepted would result in rejection of the higher per unit offers.

The per acre rates apply to annual payments which are earned each year a conservation reserve contract is in effect. In addition, a farmer can get a payment covering a substantial part of the cost of establishing approved conservation practices on designated conservation reserve land.

ALLOCATION OF FUNDS TO STATES

Mr. WHITTEN. May I point out another problem since we have gone into that—we have certain States that have gone into the full amount of the allocation for that area. You also have a few others who have not. Under your allocation of funds to the various States, is that done by some formula?

Mr. MCLAIN. The breakdown of the totals for the States?

Mr. WHITTEN. Yes.

Mr. MCLAIN. It is not done by a precise formula. Do you want to comment on that, Mr. Doggett?

Mr. DOGGETT. I did not bring with me the material on the conservation reserve today because I did not think we would get into this.

Mr. WHITTEN. May I interrupt, and ask, since you do not have it here, that you put in the record the general provisions on this.

This committee is generally familiar with it.

(The information requested follows:)

No allocation of 1959 conservation reserve program authorizations to States will be made until all States have had an opportunity to evaluate the proposed 1959 State rates and acreage goals for new participation, and make any desired recommendations. The preliminary allocation will depend on (1) the approved State goal, (2) the approved State rate, and (3) the total program authorized by Congress. If any preliminary allocation is unused the excess will be shifted to States having demand in excess of their original allocation.

Mr. MCLAIN. May we be off the record?

Mr. WHITTEN. Of course.

(Thereupon there was a discussion off the record.)

Mr. MARSHALL. Mr. Chairman, I would like to say this: I think your committee has a right to expect in the future operation of the conservation reserve that within counties we could expect a wide variation set by county committees.

Mr. MCLAIN. That is correct, sir.

Mr. MARSHALL. If the county committees do not accept their responsibility in setting rates commensurate with the value of the land, the only answer then would be that there will be no conservation program.

Mr. MCLAIN. We agree with that completely. If they do not do the job, it is not going to be because we have not tried to make them do the job.

I think they want to do the job.

Mr. MARSHALL. I am sure they do, too, Mr. Secretary, but I think there has been a feeling on their part that in trying to get in on the program they have been discouraged in making rates on that basis.

Mr. MCLAIN. I think part of that trouble came when we did not permit them to take any land above the average. If they can demonstrate that it is above average, they will have to document it; but if it is below average, they will have to show that, too.

Mr. WHITTEN. Are there any further questions on this?

If not, we will proceed on to the next item.

AGRICULTURAL CONSERVATION PROGRAM SERVICE

EMERGENCY CONSERVATION MEASURES

WITNESSES

FRED G. RITCHIE, DEPUTY ADMINISTRATOR, AGRICULTURAL CONSERVATION PROGRAM SERVICE
JAMES M. HUNT, DIRECTOR, PROGRAM ANALYSIS DIVISION, AGRICULTURAL CONSERVATION PROGRAM SERVICE
CHARLES L. GRANT, DIRECTOR OF FINANCE AND BUDGET OFFICER, DEPARTMENT OF AGRICULTURE

Mr. WHITTEN. Next we will consider the request of the Agricultural Conservation Program Service. At this point I would like to have included in the record the appropriate part of page 11 of House Document 394 and the justification.

(The material referred to follows:)

"AGRICULTURE CONSERVATION PROGRAM SERVICE

"EMERGENCY CONSERVATION MEASURES

"The unobligated balance of the amounts made available under this head in the Third Supplemental Appropriation Act, 1957, and in the Supplemental Appropriation Act, 1958, shall remain available through December 31, 1958."

The two appropriation acts referred to above provided $24 million through June 30, 1958, for cost-sharing assistance to farmers for carrying out emergency conservation measures made necessary by natural disasters. Adverse weather conditions during the latter part of 1957 and the early part of 1958 caused difficult field operating conditions which prevented farmers from completing needed and planned conservation practices in some areas, particularly in the flood-damaged areas in Texas and Kentucky and in the hurricane-damaged areas in Louisiana. In addition, similar conservation problems have arisen in California and adjacent areas this year because of excessive rainfall, snow-melt runoff, and high coastal waves. Some of these problem areas cannot be treated before June 30, 1958. This

proposed authorization is to enable the Department of Agriculture to continue the program through December 31, 1958, with the unobligated balance which would otherwise expire on June 30, 1958.

PURPOSE AND NEED FOR SUPPLEMENTAL FUNDS

Need for authorization.—Adverse weather conditions in the latter part of 1957 and during 1958 created difficult field operating conditions. In some areas it was impossible to carry on any appreciable work for several months. As a result, many farmers in the counties designated eligible for emergency cost-sharing assistance have not been able to complete the needed and planned work and will not be able to do so by June 30, 1958, the expiration date for availability of emergency funds. This is especially true in designated areas of Indiana, Kentucky, Louisiana, and Texas. However, limited amounts of remaining work of the same kind may be needed in the designated areas in the other States.

A serious threat continues in some of the western mountain areas because of the unusually heavy snow pack which is subject to sudden thaws and resulting disastrous floods. Other natural disasters may occur later in the year in other areas of the country which would require emergency cost-sharing assistance to carry out needed remedial practices.

Present indications are that in States in which natural disasters have occurred, all of the regular 1958 agricultural conservation program funds will be needed for existing conservation problems and that adequate treatment of emergency conservation problems is contingent upon extending the availability of the emergency conservation funds. It is presently estimated that $5 million will be used for conservation practices performed through June 30, 1958. This will leave approximately $19 million which will expire for obligation purposes on June 30, 1958, unless the proposed language is enacted.

Assistance under the 1957 and 1958 programs (through June 30, 1958) was offered only in those areas where, due to natural disasters, additional public assistance was required to help farmers protect or rehabilitate their farmlands.

One hundred and fifty-four counties in eleven States (Arkansas, Indiana, Kansas, Kentucky, Louisiana, Minnesota, Missouri, New Mexico, Oklahoma, Oregon, and Texas) and an area in Alaska have been designated as eligible under the criteria set forth in Public Laws 85–58 and 85–170 to receive funds for emergency cost-sharing assistance.

Mr. WHITTEN. This is a request for language extending the authority of the emergency conservation measures through December 31, 1958.

Do you have a general statement you would like to make, Mr. Ritchie?

Mr. RITCHIE. Yes, sir; I have.

Mr. WHITTEN. You may proceed then, Mr. Ritchie.

GENERAL STATEMENT OF FRED G. RITCHIE, DEPUTY ADMINISTRATOR, ACPS

Mr. RITCHIE. Disastrous floods occurred in the spring of 1957 in about a dozen States. A hurricane did extensive damage on the gulf coast of Louisiana. These natural disasters created conservation problems that were so serious that Federal assistance was urgently needed to restore destroyed conservation practices and rehabilitate severely damaged farmland.

Funds in the amount of $24 million, to be available through June 30, 1958, were appropriated by the Congress last summer on the basis of preliminary estimates of damage in the affected areas. These funds were to share the costs of emergency conservation measures needed as a result of natural disasters, including repayment of about $1 million which had been advanced from the President's disaster relief fund for emergency conservation measures needed as the result of a hurricane in Puerto Rico in 1956.

The criteria applicable to the ues of these emergency funds were stated in Public Law 85–58 (applicable also under Public Law 85–170), as follows:

> * * * new conservation problems have been created which, (1) if not treated, will impair or endanger the land, (2) materially affect the production capacity of the land, (3) represent damage which is unusual in character and, except for wind erosion, is not the type which would recur frequently in the same area, and (4) will be so costly to rehabilitate that Federal assistance is or will be required to return the land to productive agricultural use * * *

As a result of natural disasters of the indicated magniture, United States Department of Agriculture county and State disaster committees, utilizing the technical services available to them, estimated the extent of damages to farmland and requested funds in specified amounts to deal with as much of the conservation problems created as could be dealt with through June 30, 1958.

These emergency conservation funds, amounting to a net of $6,267,502, have been allocated under the 1957 and 1958 agricultural conservation program to 11 States for use in 154 counties and parishes, and to 1 area in Alaska, designated by the Secretary as disaster counties. The repayment to the President's disaster relief fund brought the total up to $7,198,302. However, adverse weather conditions in many of these areas during the fall and winter of 1957 and to date in 1958, has prevented the completion of a great amount of the work for which the ASC county committees have authorized cost sharing with farmers and ranchers who have requested such assistance. In large areas, there have been to date only 30 to 40 days of weather suitable for field operations this spring and summer. It is presently estimated that $5 million will be used for conservation practices performed through June 30, 1958. This will leave approximately $19 million which will expire for obligation purposes on June 30, 1958, unless the proposed language is enacted.

This inability to complete the authorized work by June 30 has been specifically reported for substantial areas in several States, particularly where new flooding or continued rains have occurred this spring. In some of these cases, such as in Texas and Kentucky, some additional damages to farmland have occurred this year. Floods in New Mexico this spring did damage for which emergency funds have been allocated, but which probably cannot be completely repaired by June 30, even though efforts are being made to get as much eligible work done as possible. The magnitude of the damage in the hurricane area of Louisiana, as well as adverse weather conditions to date, has prevented much-needed work from yet being undertaken there.

Because of these conditions, perhaps less than half of the funds actually allocated for needed work can be utilized in several States by June 30. For example, in Texas alone, it is estimated that not over half of the work for which $2 million of these emergency funds were allocated can be done by that date.

The conservation problems created still exist where rehabilitation measures have not been applied. Failure to complete these emergency measures will result in additional, continued, and in some instances accelerated damage to the land.

In large areas of California and the Southwest, the snow pack in the mountains approaches a maximum of record. Violent storms in

March and April resulted in such increases in already heavy snow-pack areas that forecasts range from 125 to 180 percent of normal streamflow, with the probability of land damage from flooding. While the time of year will soon be past when floods from snowmelt, often accompanied by heavy rains, will likely occur, the threat is still serious downstream from some of the high mountain areas where the snow pack is unusually heavy this year.

Also, it is relatively common for hurricanes and other natural disasters to occur in the summer and fall months, after practically all regular ACP funds have been committed to other conservation practices. Such an extension of the period of availability of these emergency conservation funds could well be crucial in treating conservation problems created by such disasters.

It is the Department's feeling, however, that the period of availability need be extended only through December 31, 1958. After that date, if additional funds should be needed for emergency purposes, the Congress would be in session and could consider any such needs.

Gentlemen, that concludes our statement. We would be glad to answer any questions you may have.

DELAYS IN COMPLETION OF WORK

Mr. WHITTEN. Mr. Ritchie, I notice on page 2 of your statement you make the following statement, and I quote:

> However, adverse weather conditions in many of these areas during the fall and winter of 1957 and to date in 1958, has prevented the completion of a great amount of the work for which the ASC county committees have authorized cost sharing with farmers and ranchers who have requested such assistance.

It is my personal opinion that where the ASC committee has authorized such cost sharing an obligation has been created and the funds should continue to be available.

I did want the record to show that, by granting you this continuing language, we did not mean that in the absence of it you might not have had the authority to proceed, where for one reason or another the completion has been delayed.

Mr. WHITTEN. Mr. Andersen?

Mr. ANDERSEN. Mr. Chairman, I would like to back up Mr. Ritchie in his plea to have this done because we have in several parts of Minnesota, as Mr. Ritchie knows, certain areas vitally affected by this. June, a year back, we had a very severe flood in Minnesota; it did $18 million worth of damage in Lyon County. In certain areas along the Minnesota River and other rivers, much debris and sand and such was washed up over this agricultural land to the extent the farmer himself without aid cannot possibly restore it to its original value.

I had considerable to do with the State ASC committee last winter, Mr. Ritchie, in urging them to make available the so-called deep-tillage practice under which a farmer could get assistance in the line of heavy-powered caterpillars, for example, to carry on and do the job necessary in plowing to a certain depth so as to get rid of this sand and gravel which was spread over the area concerned.

Take my area, for example. There have been only 30 or 40 days this spring that might have been available, and in that time the farmer was interested in getting his crop in and only now is he able to

get in and do such work as repairing the damage to his land, and I am glad that you are coming before this committee and asking that these funds be available at least until December 31.

I think it is very essential. Thank you Mr. Chairman.

EXTENSION OF PROGRAM TO COVER RECENT DISASTERS

Mr. HORAN. Mr. Chairman, I would like to ask a question of Mr. Ritchie. In flying back from Oklahoma City this morning we flew over a portion of southern Illinois and southern Indiana, and were able to look over in the great State of Kentucky. It looks to me like you are going to have some additional demands down there, I am certain, because it cannot be escaped. There certainly is a major flood there.

Will this language enable you to proceed to serve those deserving people?

Mr. RITCHIE. Yes; I believe it will. We have heard from Indiana, and they think that they have additional substantial damage, and it is our understanding that, if this language is accepted we could not only deal with the damages which occurred last June a year ago, and last fall, but also we could deal with these new floods that have come into the States in the last few months.

Mr. WHITTEN. Would the gentlemen yield?

Mr. HORAN. Yes.

Mr. WHITTEN. Where these States are limited, and there is a limit on what this money can be used for, it would be better for the committee to extend it, which would make it available for these new emergencies that may arise.

I expect to make that recommendation to the full committee.

Mr. ANDERSEN. I certainly agree.

Mr. HORAN. Mr. Chairman, I had this feeling in the lands which we flew over, it is a one-crop operation, and I do not think they can recover from a disaster as they can in Florida in time to raise a crop this year.

I suspect we are going to have quite a problem down there. I just raised that because I am not objecting to any recommendation to help any of these neighbors in the United States.

I just had that feeling as I looked down on it. It did not look good.

COST SHARING IN DISASTERS

Mr. VURSELL. Mr. Chairman, I believe this provides for about $19 million for disaster loans; is that right?

Mr. RITCHIE. No, sir; this is for cost-sharing payment with the farmer.

Mr. VURSELL. What percentage of sharing?

Mr. RITCHIE. Up to 80 percent on the cost of the restoring of the land to its condition or as near the condition as we can get it before the flood damaged it or whatever other natural disaster occurred.

Mr. VURSELL. I am glad you are here because I noticed in Indiana, the Governor had practically the whole State declared as a disaster area because of floods up there in the past several weeks.

Now, many people are calling me down on the Wabash River, and I started calling the Secretary of Agriculture at 9 o'clock this morn-

ing and did not get any information yet about it, to try to see what the situation would be down here as to whether help could be rendered.

What do you know about that Indiana situation?

Mr. RITCHIE. Sir, we know that the recent floods have not only been creating damage but will probably continue to create damage to some of the land as they move downstream.

LAND RESTORATION

These funds in this act are limited to practices to restore the land itself. In addition to that, there are various loan authorities of the Department and other emergency facilities for dealing with the problems that come about immediately following a disaster.

I think probably you might get additional information on loans from the Farmers' Home Administration. That is something outside our budget.

Mr. VURSELL. What do you mean by restoring lands?

Mr. RITCHIE. By removing debris, plowing under deposits of sand that are so spread over the land as to render it substantially unfit for agricultural use.

Frequently these floods will plug up drainage systems to the point where there will have to be a very substantial investment by the farmer in clearing out the drainage system to get the water off the land. Even at times lands which have had no particular drainage problem will have one created by having banks thrown up long the stream.

We also have gullying and washing of land where these heavy rains have broken drains and so forth.

Mr. VURSELL. In other words, the Federal Government, in this real disaster situation, would pay costs up to 80 percent?

Mr. RITCHIE. That is right, sir.

USE OF PRESIDENT'S DISASTER RELIEF FUND

Mr. VURSELL. All right. Let us go into another thing. Those 40,000 acres washed out there—crops and everything else at the present time—some buildings destroyed and people taken away from their homes, and the thing is standing under water—that 30,000 acres.

Can you declare a disaster on a situation like that? You take over 2,000 families. How could these farmers be helped, assuming their land was not covered with debris?

Mr. RITCHIE. I believe, Mr. Vursell, that the provisions of Public Law 875, which is the President's disaster relief fund, might apply in such a situation, in dealing with such problems as helping restore damages to the water systems of the towns and helping them with the various problems that were created.

Mr. VURSELL. I understand Mr. Hansen was going out into that area from your Department.

Mr. RITCHIE. Yes, sir.

DISASTER COMMITTEES

Mr. VURSELL. Is it customary for the Department of Agriculture to be kept informed by the ASC in conditions like this that have been building up for the last 2 weeks and everybody knows that that flood is moving and is finally going to descend on the people down there and is doing it—is there anybody in there to help?

Mr. RITCHIE. Yes, sir; there is a disaster committee in each State made up of the chairman of the ASC committee and other agencies.

Mr. VURSELL. There is one to each State?

Mr. RITCHIE. Yes, sir; and they also have a disaster committee in each county made up of the Department of Agriculture agency representatives, and they begin as soon as they can, evaluating the damage to the farmland and the farming area and reporting that to the Department.

Mr. ANDERSEN. Would you yield, Mr. Vursell?

AVAILABLE DISASTER RELIEF MEASURES

Might I state my experience from last year?

In the first place, the Farmers' Home Administration has very little power. Certain areas will be declared disaster areas, and about all that the Farmers' Home Administration can do through such declarations is to lower the rates of interest in that particular area on the particular disaster loans made to help out the farmers in their ordinary operation.

That is what I found out as a result of our operation back there last year, Mr. Ritchie.

The ASC can do something toward throwing some of these conservation funds into practices designed to restore land. For example, if you have some farms down there that are gullied as a result of the rapid runoff, the Federal Government can get in there and pay up to 80 percent of the total cost of repairing that gully.

Certainly they can get in there and help to clean off debris. They can get in there and help to deep plow—even to a depth of 18 inches or 22 inches—land which has been covered by 2 or 3 inches of gravel and sand and wash, put that down where it belongs, and there is one other practice, I believe, Mr. Ritchie, that you people can be of assistance on.

Mr. VURSELL. I see.

Mr. ANDERSON. In the villages they can do nothing—that is, the Department of Agriculture has nothing to do whatsoever. That comes under branches of the Government, the civil defense and Small Business Administration, and in a particular village that agency can go in and do far more for that particular village than the Farmers' Home Administration can do for farmers.

The civil defense can get in there and make almost instantaneous grants having to do with municipal works, anything owned by the local government or divisions of the Government. They can do far more in that.

In fact, I appeared, I might say, before the legislative committee, the Committee on Agriculture, last spring, and urged that the Farmers' Home Administration continuously in their power have a loan fund which they could go into an area affected like your area in those

two counties and approach these farmers and say to these particular farmers, "Well, what do you need to stay in business", on the grounds that it is poor policy for the Government to let these farmers go out.

Later on, after 6 months of studying that particular farmer's problem, they could perhaps declare a percentage, if not all of that loan, as a grant from the Government toward helping to keep that particular farmer in business.

I proposed that in a bill that is pending before the Committee on Agriculture, and to my way of thinking, the Farmers' Home Administration, the Department of Agriculture, has very little power, if any, given to it by the Congress to do the job it should do in helping these farmers who are hurt.

I might say that I found that out last year. I was very much discouraged at seeing how little relief could be provided, and I have tried this other way, by going before Mr. Cooley's committee, Mr. Vursell, and setting up a revolving fund so that these people could get it and really help the people instead of waiting for the Congress to step in and help places which have had a lot of notoriety instead of helping these little people.

That is my experience, Mr. Vursell.

Mr. HORAN. Mr. Chairman, may I make some observations I think should be made at this time?

The Farmers' Home Administration is empowered by its statutory base to make exceptions in the case of farmers who can produce. The Farmers' Home Administration exists as an extreme and emergency form of production credit loans account with lower interest and highly liberalized collateral requirements.

I am a little bit afraid if we start fooling around with that base of the Farmers' Home Administration, it might be done in a bad light and might destroy them altogether. I have no objection to my colleague's observations here, however.

Mr. WHITTEN. We would be glad also to have you supply any further information, though it may come from some other division of the Department, as to the proper procedure to meet those problems. I think the first step is as to its being a disaster area. But whatever that procedure is, put it on the record.

Mr. HORAN. And also supply as to whose jurisdiction it is and who has authority to recommend regarding the settling of disaster conditions.

Mr. RITCHIE. We will try to get a statement for the record covering that.

(The material requested follows:)

There are five ways in which the Department of Agriculture may give emergency assistance when disaster affects the agriculture of an area:

1. Surplus food may be made available to needy people on the request of the local welfare agency to the State office of the Food Distribution Division of the Agricultural Marketing Service or to Food Distribution Division, Agricultural Marketing Service, Department of Agriculture, Washington, D. C. The food is made available to the State agency which is responsible for its distribution.

2. Emergency loans under Public Law 38, 81st Congress, may be made available to eligible farmers in an area designated by the Secretary of Agriculture as needing such assistance. Application should be made to the local Farmers' Home Administration office.

3. Grazing of soil-bank acres may be permitted by the Secretary of Agriculture in areas which he has designated upon receipt of certification by the governor of the State as to the need for grazing, and after such investigation as may be

needed to make an appropriate determination. The program is supervised by the Soil Bank Division, Commodity Stabilization Service, Department of Agriculture, Washington, D. C. Applications for grazing of soil-bank acres should be made to the county ASC committee office.

4. Sharing the cost of emergency conservation measures may be authorized by the Secretary of Agriculture through the Agricultural Conservation Program Service to assist farmers to carry out emergency rehabilitation practices on farmlands damaged by wind erosion, floods, hurricanes, or other natural disasters when, as a result of the foregoing, new conservation problems have been created that meet certain criteria specified in the law. Application for such assistance should be made to the county ASC committee office. The program is under the direction of the Agricultural Conservation Program Service, Department of Agriculture, Washington, D. C.

5. Surplus feed grain or assistance in the purchase of hay or other roughage may be made available to eligible needy farmers by the Secretary of Agriculture in areas designated as major disaster under Public Law 875, 2d session, 81st Congress, by the President. This assistance is administered by the governor and the Commodity Stabilization Service, Department of Agriculture, Washington, D. C. Application for such assistance should be made to the county ASC committee office.

Mr. WHITTEN. I have had numerous colleagues from various sections of the country to discuss this problem with me.

Among them was Mr. Sisk of the 12th District of California, and Mr. McFall of the 11th District of California. Without objection, statements from these Members will be included in the record at this point.

(The above-mentioned documents follow.)

STATEMENT OF REPRESENTATIVE B. F. SISK, OF CALIFORNIA

Mr. Chairman, in the Third Supplemental Appropriation Act, 1957, and the Supplemental Appropriation Act, 1958, which became Public Laws 85–58 and 85–170, your committee recommended and the Congress approved appropriations totaling $24 million to finance Federal sharing of the cost of restoring productivity of farmlands damaged by floods and other natural disasters. These appropriations expire on June 30, 1958. Approximately $16 million of the total remains unexpended.

This spring many farming areas of the Nation have been severely damaged by floods and these floods are continuing and may be expected to strike other areas in future months. These natural disasters, piled on top of existing economic difficulties, leave many farmers unable to restore their lands without assistance and they badly need this emergency land conservation aid, which is administered through county ASC committees of the Department of Agriculture.

Congressman John J. McFall and I, being aware of the extreme importance of this assistance to flooded areas of the districts we represent in California, have introduced legislation to extend the date of availability of these emergency ufnds. The bills are numbered H. R. 11949 and H. R. 11957, and they are now before your committee for consideration. This proposed legislation does not involve any additional appropriation of funds. It extends the date within which flood repair work may be accomplished and insures that the Federal cost-sharing contribution will remain available to take care of damage now occurring. It will make it possible for ASC committees to receive applications, issue commitments, and authorize farmers to undertake regrading, leveling, debris removal, and other approved practices with assurance.

I urgently request that your committee either approve the bills, which I am sure will win speedy passage by the Congress, or incorporate their provisions in a general appropriation bill now under consideration. Either action will effectively carry on this emergency program and make this help available to farmers all over the country.

STATEMENT OF REPRESENTATIVE JOHN J. M'FALL OF CALIFORNIA

Mr. Chairman, I appreciate the opportunity to enter this statement today in behalf of legislation to extend the availability of funds appropriated for emergency conservation measures under Public Laws 85–58 and 85–170.

Appropriations totaling $24 million under these acts are scheduled to expire on June 30, 1958. Approximately $15 million of the total remains unexpended.

Many farming areas in California and in other States were seriously damaged by floods this spring and these floods may be expected to strike in the same or other areas in future months.

Congressman B. F. Sisk and I introduced legislation (H. R. 11949 and H. R. 11957) to extend the availability of these emergency funds for 2 years. This legislation does not involve any additional appropriation of funds.

The President has since recommended to your committee that these funds be continued available to December 31, 1958, because unfavorable weather conditions have greatly delayed work on emergency practices for which cost sharing is authorized.

If your committee takes favorable action it will be possible for Agriculture Stabilization Conservation committees to receive applications, issue commitments, and authorize farmers to undertake regrading, leveling, debris removal, and other approved practices. The time is too short without this extension.

I request that your committee give serious consideration to either approval of the bills introduced by Congressman Sisk and myself, or incorporation of their provisions in a general appropriation bill now under consideration.

AGRICULTURAL RESEARCH SERVICE

WITNESSES

DR. M. R. CLARKSON, DEPUTY ADMINISTRATOR, AGRICULTURAL RESEARCH SERVICE
DR. W. L. POPHAM, ASSISTANT ADMINISTRATOR, REGULATORY PROGRAMS, AGRICULTURAL RESEARCH SERVICE
DR. A. R. MILLER, DIRECTOR, MEAT INSPECTION DIVISION, AGRICULTURAL RESEARCH SERVICE
EDMUND STEPHENS, DIRECTOR, BUDGET AND FINANCE DIVISION, AGRICULTURAL RESEARCH SERVICE
CHARLES L. GRANT, DIRECTOR OF FINANCE AND BUDGET OFFICER, DEPARTMENT OF AGRICULTURE

Mr. WHITTEN. We are glad to have you with us, gentlemen. We come now to a request for a supplemental appropriation for the Agricultural Research Service.

I would like the appropriate portion of page 11 of House Document 394 and pages 3 to 8 of the justifications to be included in the record at this point, as well as the general statement of Mr. Peterson, Assistant Secretary. Mr. Peterson was delayed, and I told him it would be included in the record, and it was not necessary for him to appear in person.

(The above-mentioned documents follow:)

(Excerpt from page 11, House Document 394)

"DEPARTMENT OF AGRICULTURE, AGRICULTURAL RESEARCH SERVICE

"SALARIES AND EXPENSES

"For an additional amount for 'Salaries and expenses,' as follows: Plant and animal disease and pest control, $3 million; meat inspection, $2,100,000."

The $3 million for plant and animal disease and pest control is to provide funds for a program, to be undertaken in cooperation with the States of North Carolina and South Carolina, for the control and eradication of witchweed or Striga. This parasitic plant, which causes a serious disease of corn, sorghum, and sugarcane and also attacks wheat, oats, rice, and numerous grasses, was

found late in the summer of 1956 on several farms in the Carolinas. Recently completed surveys show infestations in 16 counties and more than 1,600 farms. The history of this infestation indicates that any delay in initiating control work will lead to further spread and a corresponding increase in the cost of eradication. Expert opinion is that eradication of the pest should be undertaken immediately.

The $2,100,000 for meat inspection is to provide additional meat inspectors necessary to adequately service meatpacking plants that are subject to the meat-inspection laws. There has been a sharp increase in the number of plants requesting inspection service since the 1959 budget was transmitted.

Justification of supplemental estimate, for salaries and expenses, fiscal year 1959

1. Plant and animal disease and pest control:

Appropriation, 1959	$47,132,000
Supplemental estimate, 1959	3,000,000
Revised estimate, 1959	50,132,000

An increase of $3 million for eradication of witchweed, a serious pest of corn, sorghum, and sugarcane.

Need for increase.—In the late summer of 1956, witchweed was found in the Carolinas, the first discovery of this pest in North America. It is a parasitic plant and a serious pest of corn, sorghum, and sugarcane. It also attacks more than 60 other species of the grass and sedge families, including rice, wheat, oats, and barley. Witchweed is widely distributed in South Africa and India, and occurs in China and Australia.

Witchweed spreads rapidly on infested farms, and from one farm to another on farm machinery or by movement of anything that carries soil. By the end of the first year following initial infestation the seed becomes pretty well scattered throughout an entire field. By the end of the second year, adjacent fields on the farm are likely to be infested to some degree and by the end of the third year, farmers experience serious economic losses. It is generally recognized by both county agricultural agents and farmers that without an organized and aggressive eradication effort, little can be done to hold infestation in check.

Extent of infestation.—Witchweed has been found on 1,743 farms in 17 counties of adjoining areas in the Carolinas. Infestation now totals 190,000 acres, of which 81,000 acres are under cultivation. Surveys have been extended to some 46 other counties in the Carolinas. Spot checks have been made in corn- and sorghum-growing areas in other States east of the Mississippi River. It is believed that the boundaries of the areas of general infestation are pretty well established.

Quarantine enforcement.—A Federal quarantine became effective on September 6, 1957, and parallel State quarantines in North Carolina and South Carolina have also been invoked to prohibit both interstate and intrastate movement of products or articles capable of spreading witchweed. However, such measures cannot be fully effective until action is taken to prevent further seed production.

Eradication procedures.—Witchweed can be killed by a combination of herbicidal treatment and cultural practices. At this time eradication appears to be both feasible and practical. There have been few instances with plant pests when the matter of time was so important. There is need for aggressive action while the acreage infested or directly exposed to infestation is relatively small, while there is still a minimum danger of long-distance spread, and before the parasite becomes established in other parts of the country where host crops are basic to the agricultural economy.

Outlook.—The principal host crops attacked by witchweed—corn, sorghum, and sugarcane—have an annual value of $5 billion. Already in the Carolinas corn yields in heavily infested fields have been drastically reduced. In a few cases the crop was not worth the cost of harvesting. Generally infested fields can be brought back into production only after several years of controlled tillage and intensive management, during which there is little, if any, return from the land. There is no apparent reason why witchweed would not be a limiting factor in crop production in any part of the country where the principal host crops are grown commercially.

State cooperation.—It is anticipated that the two affected States, North and South Carolina, will participate if the Department takes vigorous action. However, since the agriculture in the infested area centers principally around tobacco and other cash crops not affected by witchweed, an eradication program is more

vital to the Nation than to these States. The Department, therefore, must be prepared to assume major responsibility for getting the work underway before leading corn- and sorghum-producing areas of the country become infested.

Plan of work.—Although 190,000 acres of land are infested or exposed to infestation, it is estimated that immediate suppressive action is necessary on only about 60,000 acres if the work is undertaken during the coming 1958 crop season. Eradication of witchweed would require the intensive treatment of known infested areas and continuation of surveys to delimit areas of infestation and to locate new infestations. Since the seeds may remain dormant for years in the absence of host plants, an eradication program will require several years of intensive work. Plans for an eradication program would include:

(*a*) Strict enforcement of both Federal and State quarantine to prevent spread of the witchweed to new areas. These measures apply to the movement of all articles, including soil, that may carry witchweed seed and which constitute a hazard of spread. Such enforcement will have the effect of encouraging farmers to cooperate fully in the eradication program.

(b) Initiation of intensive cultural practices involving the use of trap crops on known infested fields. Under agreement with land owners, a favored host crop such as corn, sorghum, or Sudan grass would be planted to stimulate maximum germination of witchweed seed. As the parasite began to appear above ground, this crop would be destroyed before the seed could mature and another trap crop planted. Under Carolina conditions it is believed that three such trap crops can be grown each year, thus shortening the period of eradication. This procedure calls for a high degree of precision with respect to both timing and thoroughness of cultural operations. Where possible, formal agreements would be entered into with the landowner or the tenant to do the work under the close supervision of a Federal or State inspector, working under State authority. Should a property owner refuse to participate, appropriate action would be taken under existing State plant pest authority. Such instances, if any, are expected to be few since farmers in the area are aware of the serious nature of this problem and can be expected to contribute substantially to the eradication effort.

(*c*) Cultural operations with herbicidal treatment of field margins, roadsides, and other noncultivated lands near or adjacent to such fields.

It is estimated that the funds for the eradication program would be distributed as follows:

Survey, supervision, and quarantine enforcement	$350,000
Eradication measures	2,650,000
Total	3,000,000

2. Meat inspection:

Appropriation 1959	$17,326,000
Supplemental estimate, 1959	2,100,000
Revised estimate, 1959	19,426,000

An increase of $2,100,000 for additional inspectors.

Need for increase.—The constant increase in the number of meatpacking plants and in the number of cities and towns where such plants are located is increasing the need for additional meat inspectors. Many establishments are going to extra shifts to speed up production instead of building a new plant or enlarging present facilities. This also requires additional inspection. It is expected that the situation will become especially acute in fiscal year 1959. Insufficient inspectors cause slowdowns in meat production, and without additional inspectors, the number and duration of such slowdowns can be expected to increase substantially. The consequences of slowdowns are serious. They cause layoff of packinghouse workers, and through disrupting packinghouse schedules affect the farmers' markets for livestock and increase the cost to the consumer. Shortages of personnel also are a threat to consumer protection.

Several factors are contributing to the increase in the demands for Federal meat inspection. The complexity of modern meat merchandising compels many meatpackers who previously have been satisfied with a local business to have their products inspected so that they are eligible to move freely in interstate commerce. The trend toward decentralization of the meatpacking industry has been stepped up because of changes in meat merchandising, particularly increased consumer packaging by interstate packers. Chainstore merchandising and insti-

tutional buying by both military and civilian agencies require delivery of federally inspected meats.

The meat inspection program consists of a system of controls applied to the meatpacking industry in its animal holding pens, its slaughtering departments, and its great variety of meat processing departments. The objectives of the controls are to keep unfit animals out of the food processing departments of the meatpacking plants, separate, and effectively destroy all diseased and otherwise unfit materials, require correction of insanitary conditions, and prohibit adulteration and misbranding. These controls are applied through meat inspectors who are assigned to industry's production lines.

The inspection procedure constitutes an integral part in the production process in the inspected meatpacking plant. The inspectors work side by side with meatpacking plant production men, each with his specialized duties that taken together convert livestock into clean, wholesome, disease-free unadulterated, and properly labeled meat and meat-food products. If a shortage of inspection personnel develops it has the immediate effect of limiting plant production. Many packers individually and through their associations have complained because the shortage of inspectors adversely affects their plant operations.

It is recognized both in industry and in Government that the standards of inspection must be maintained. The mark of inspection must be backed up by an adequate inspection program. Consumer confidence is essential to the marketing of the products of the American livestock and meat industry.

The need for a larger inspection force for the increasing number of inspected plants and other factors is evidenced by a comparison of the current situation in fiscal year 1958, and estimated for fiscal year 1959, with the situation in fiscal year 1957. In fiscal year 1957, the meat inspection appropriation of $15,650,000 provided for 3,023 average annual positions. The 1959 appropriation of $17,326,000 provides for an estimated 2,887 average annual positions, a reduction of 136 positions from 1957. Of the total increase of $1,676,000 in appropriations between 1957 and 1959, $936,000 was to meet the costs of the Government's contributions to the retirement fund. Increased costs, including within-grade salary advancements, new civil service job specifications requiring higher classifications, and increased operating costs, have more than prevented the $740,000 balance of the increase from being reflected in increased meat inspection personnel.

During the same period, the factors affecting the need for inspectors have increased substantially as shown by the following tabulation:

Item	1957	Estimated		Percent change from 1957	
		1958	1959	1958	1959
Plants served (as of June 30)	1,244	[1] 1,306	1,356	+5.0	+9.0
Cities and towns in which plants are located (as of June 30)	502	[2] 520	540	+3.6	+7.6
Man-years of employment	3,023	3,002	[3] 2,887	−.7	−4.6

[1] 1,289 as of Apr. 30, 1958.
[2] 512 as of Apr. 30, 1958.
[3] Proposed supplemental estimate would provide 3,300, an increase of 9.1 percent over 1957.

The additional workload cannot be met by increasing the amount of overtime which the inspectors work. While such overtime is paid by the packers, and not by the Government, the amount of overtime has already reached the maximum (approximately 1,100,000 hours per annum) which can be required from the present force and still continue effective inspection services.

STATEMENT OF ERVIN L. PETERSON, ASSISTANT SECRETARY OF AGRICULTURE

We are presenting for your consideration a supplemental estimate for fiscal year 1959 which includes two items; one of $3 million to initiate an eradication program against witchweed in North and South Carolina; and one of $2.1 million for addition to meat inspection funds.

The witchweed is a parasitic plant recognized in the late summer of 1956 as the cause of severe damage to corn in certain areas of North Carolina and of South Carolina. It had not previously been reported in the Western Hemisphere, but is rather widely distributed throughout South Africa, Arabia, and India.

Witchweed parasitizes the roots of corn, sorghum, sugarcane, and more than 60 species of the grass and sedge families of plants, including rice, wheat, oats, and barley. It is regarded as one of the most destructive pests affecting the production of corn, sorghum, and sugarcane. On corn and sorghum it causes yellowing and severe stunting. In heavy infestations there is complete crop destruction.

Corn and sorghum are basic to the agricultural economy of vast areas of the country. Because of soil and temperature limitations land suitable for sugarcane production is limited and must be protected. As witchweed does its greatest damage before appearing above ground, farmers with infested fields have no effective way of applying suppressive measures while realizing a return from their land. The eradication of the witchweed is a matter of national concern.

By May 31 of this year, infestation had been found on 1,743 farms in 17 counties in North and South Carolina. Areas infested or exposed to infestation total about 190,000 acres. Of this, 81,000 are under cultivation. Witchweed seeds are microscopic and may be spread from one farm to another on machinery or by movement of anything that carries soil. The per acre cost of eradication will be high, but by taking prompt action the ultimate cost of the program can be kept to a minimum.

Corn is a secondary crop in the areas in which witchweed has become established. Cotton and tobacco are the principal cash crops. This is clearly a case where the Federal Government must assume a major share of the cost of eradication if the remainder of the country is to be protected. I should point out, however, that the two affected States have assured the Department that they will participate in an eradication effort to the maximum extent possible. Other parts of the country, particularly the Midwestern States, have urged the Department to act promptly while the areas involved are small.

The Department has moved forward in a positive manner in dealing with this problem. A Federal quarantine was invoked on September 6, 1957. Both North and South Carolina have supported this action with similar State quarantines in an effort to confine infestation to the farms now infested. The Agricultural Research Service and the North and South Carolina Agricultural Experiment Stations are engaged in an aggressive research program aimed at perfecting eradication procedures. The agricultural extension services of the two States are giving full support to the program.

No funds have been budgeted specifically for witchweed eradication. The Department has drawn on the contingency fund to make surveys, invoke the Federal quarantine, and to participate with the States in developing and testing eradication procedures. It is estimated that a Federal appropriation of $3 million will be required during fiscal year 1959 to initiate an effective eradication program. Of this amount approximately $350,000 is needed to survey corn-producing areas east of the Mississippi River, enforce the Federal quarantine, and provide technical supervision of the eradication effort. The remainder, $2,650,000 would go directly into eradication operations.

It is impossible at this time to estimate the overall cost of this program. It is expected, however, that expenditures would remain at approximately the $3 million level over a period of 3 to 4 years. It is anticipated, however, that during this time the program can be brought to the cleanup stage on acreage now known to be infested.

MEAT INSPECTION

The second item is for an additional $2,100,000 for meat inspection. The continued increase in the number of meatpacking plants under Federal inspection and in the cities and towns where such plants are located is increasing the need for additional meat inspectors. Operations during the current fiscal year have convinced us that the amount of $17,326,000 in the annual appropriation for fiscal year 1959 will not provide adequate inspection service.

Several factors are contributing to the increase in the demands for Federal meat inspection.

(1) The trend toward decentralization of the meatpacking industry has been stepped up because of changes in meat merchandising, particularly increased consumer packaging. Federal meat inspection is mandatory for the movement of products in interstate commerce.

(2) Small companies are finding it increasingly necessary to ship interstate in order to compete, and, therefore, must request Federal inspection.

(3) More meatpacking plants are being built in the country near the source of livestock supplies. These plants find it necessary to ship interstate to large consuming centers.

(4) Many establishments are going to extra shifts to speed up production instead of enlarging present facilities. This requires more inspectors to keep pace with plant operations.

(5) Chainstore and institutional buying by both military and civilian agencies require delivery of federally inspected meats.

Meat inspection is an integral part of the production process in a packing plant. Inspectors work side by side with packing plant production men. Each has his specialized duties to perform in converting livestock into clean, wholesome, disease-free, unadulterated, and properly labeled meat and meat food products. Insufficient inspectors have caused slowdowns in a number of plants, and without additional inspectors, the number and duration of such slowdowns can be expected to increase substantially. The economic consequences of slowdowns are serious. They cause layoff of packinghouse workers, and through disrupting packinghouse schedules, affect the farmers' markets for livestock and increase the cost to the consumer. Shortages of personnel also are a threat to consumer protection. Many packers individually and through their associations have complained because the shortage of inspectors adversely affects the efficiency of their operations.

The standards of inspection must be maintained. The mark of inspection must be backed up by an adequate inspection program. Continued consumer confidence is essential to the marketing of the products of the American livestock and meat industry.

The appropriations for meat inspection have increased from $15,650,000 in fiscal year 1957 to $17,326,000 in 1959, an increase of $1,676,000. Of this increase, $936,000 was required to meet the Federal Government's cost of contributions to the retirement fund. Increased operating costs, including within-grade salary advancements and new civil service job specifications requiring higher classifications, have prevented the remaining $740,000 from being reflected in increased personnel. Actually, if no increase is provided, there will be a decrease of 4.5 percent in average annual employment from 1957 to 1959.

The need for more inspectors is increasing continuously and has created a critical situation. The number of plants served has increased from 1,244 on June 30, 1957, to 1,289 on April 30, 1958. By June 30, 1959, it is estimated that the number will increase to 1,356, or 9 percent more than in 1957. Plans for the enlargement or extension of existing plants requiring additional inspection personnel are being approved at an average rate of around 20 per month and plans for new plants are being approved at an average rate of 13 per month. It is estimated that the number of cities and towns in which plants are located will have increased from 502 on June 30, 1957, to 540 by June 30, 1959, an increase of 7.6 percent.

The Department is requesting that the appropriation for meat inspection for the fiscal year 1959 be increased by $2,100,000. This would provide an estimated 413 man-years of employment, bringing the total number of inspectors to about 3,300, or 9 percent more than in 1957 at which time we were extremely short of inspection personnel. This is just enough to keep pace with the increased demands for meat inspectors.

Mr. WHITTEN. Dr. Clarkson, do you have anything further that you would like to add to the presentation of Mr. Peterson. Or would you like to hit the highlights?

Dr. CLARKSON. With your permission, Mr. Chairman, I would like to comment briefly on each of our two requests. It may repeat some of what Mr. Peterson says in his statement.

Mr. WHITTEN. We would be glad to have your comments.

WITCHWEED ERADICATION

Dr. CLARKSON. First, I would like to discuss witchweed. I just returned from going through a part of the witchweed area with our local people. I talked to some of the farmers whose land is affected by this disease, and I can say from my own observation that the

statements of the many people during these past months as to the danger and the potential damage that this disease can do to our corn and other crops is not overstated.

I saw fields where the witchweed had totally ruined last year's corn crop and where the farmer this year in an effort to overcome the debilitating effects of the witchweed had loaded the land with 1,000 pounds of fertilizer per acre, thinking that he could feed both the corn and the witchweed, but yesterday corn on the witchweed-infested fields stood at about half the height of corn in nearby fields that were unaffected with witchweed, and the farmer was convinced that he would get no crop.

The farmers are anxious to have something done. The extension service people are very much concerned about it and are helping out in every way they can. The situation is serious and prompt action is needed to prevent the spread of this pest.

Mr. WHITTEN. Thank you for this statement, and we, of course, have Mr. Peterson's statement, too.

We recognize the seriousness of this problem, some of the facts of which were called to the attention of this committee in its regular hearing this spring. We have in times past recommended to the Congress that funds be appropriated from the Federal Treasury to meet an emergency situation so as to prevent its spread.

However, in times past, in order to get an effective program, we have urged the Department eventually to work out a cooperative plan of allocation with the States.

What is the present situation as to the availability of funds from the States or the availability of personnel in the States for this work?

STATE SUPPORT FOR WITCHWEED ERADICATION WORK

Dr. CLARKSON. I just talked to Commissioner Ballentine of North Carolina and Dr. Farrar, who is dean of Clemson Agricultural College, Clemson, S. C., and they have both ordered the personnel of their plant pest control commissions to give every assistance possible.

They said that now they can feel assured that the Federal Government is giving serious consideration to a program for eradication, they felt confident that their governors would propose State funds when their legislatures meet next spring.

Mr. WHITTEN. I want it clear that we are not making any special demands from the States at this time, knowing that the legislatures are not always in session, and that not always does the State budget provide for these things. On the other hand, the committee has felt that you need a yardstick, and a good yardstick is whether the State will put up its proper share.

Dr. CLARKSON. We are doing everything we can to assure good State support, and the attitude of the States is good. I personally feel that the responsible officials will do everything they can.

I think though that we have to recognize that the Federal Government is going to have to carry a major share of this eradication program, at least for the time being.

Mr. WHITTEN. I can anticipate that. Mr. Andersen?

Mr. ANDERSEN. This is a very important plague to get rid of, is it not?

Dr. CLARKSON. It is the most damaging disease of corn that I have seen. It is comparable with the European corn borer in its potential damage. I have seen what this one can do, and I feel confident that the corn borer does not do more damage than this one.

There is one very important thing about this particular disease: its spread is very rapid. The seeds are microscopic in size and cannot easily be detected in the soil. The removal of any soil from infested areas must be prevented. The seeds remain viable in the soil for years.

Mr. WHITTEN. Mr. Horan.

Mr. HORAN. I have no questions on this witchweed. You have established that the request of this committee is that these eradication programs shall be on a joint State-Federal program.

Mr. WHITTEN. As soon as possible.

I did make note that this does not take into consideration any funds that might be provided during the coming fiscal year from the two States. I trust that you will not start on a full-scale basis until you have worked out many of these agreements with the States involved.

We trust that you will keep that in mind.

Dr. CLARKSON. Mr. Chairman, we will keep that in mind and do the job as honestly and efficiently as we can. I do want to point out to the Congress that while the States will help, the urgency of this project demands that the Federal Government take the major share of it. It is estimated that the budget request would provide for about 60 technical employees and 45 man-years of seasonal employment on program work.

Mr. HORAN. Mr. Chairman, I would like to make this comment, that it is very necessary that the States and the local people take an active part in it because involved here is the possibility of the involvement of property rights.

I am not trying to borrow trouble, but you may find one farmer financially able to participate and anxious to do so, but for somebody right across the road it may not be possible. While one farmer works hard to clear his land, the other lets his go.

MEAT INSPECTION

Mr. WHITTEN. If there are no further questions, we will turn to the next subject, which is meat inspection.

Mr. WHITTEN. We would be glad to have your statement in connection with that, Dr. Clarkson.

Dr. CLARKSON. Mr. Peterson's statement covers our position on meat inspection quite fully, Mr. Chairman.

EMPLOYMENT

Mr. WHITTEN. How many people do you plan to put on with that money?

Dr. CLARKSON. This increase will provide for 413 man-years of employment.

Mr. WHITTEN. How does that compare with the funds in the recent bill that was passed by the Congress providing appropriations from your regular appropriation?

Mr. STEPHENS. Funds now appropriated for fiscal year 1959 are $17,326,000, which would provide for 2,887 man-years of employment. This is an increase of $500,000 over appropriations for 1958.

Mr. WHITTEN. In other words, Congress has provided more than they have in any previous year?

Dr. CLARKSON. More funds; yes, sir.

Mr. WHITTEN. And this money would be in addition to that?

Dr. CLARKSON. Yes, sir.

Mr. WHITTEN. Then may I ask you how many additional inspectors could be employed with the $500,000?

Dr. CLARKSON. That increase provided for 58 inspectors in GS–9 grade and about 20 in GS–7. However, there is also the necessity in fiscal year 1959 of absorbing the costs of within-grade promotions, the full-year cost of the reclassification of inspectors whose positions were reclassified during the past fiscal year, and other increased costs. Actually, without the proposed supplemental budget request, the number of inspectors that we can employ in fiscal year 1959 will be less than in 1958. Our total employment is also affected by our reimbursable work. We have a table which shows the reimbursable funds, which result largely from payments for overtime, the average annual employment from the appropriations and from the reimbursable work, and the totals, for the past 7 years.

Mr. WHITTEN. I wish you would put that in the record and project it to include the bill that has just passed. Then add this $2,100,000 to that.

Dr. CLARKSON. I will do that.

(The material requested follows:)

Fiscal year	Number of animals slaughtered	Plants [1]	Cities and towns [1]	Funds available			Average annual positions		
				Appropriation	Reimbursement	Total	Appropriation	Reimbursement	Total
1953	92,598,693	991	390	$14,160,000	$2,955,989	$17,115,989	2,979	192	3,171
1954	90,928,932	1,067	410	14,190,000	2,824,580	17,014,580	2,972	176	3,148
1955	98,200,397	1,120	435	[2] 14,688,324	4,342,006	19,030,330	2,958	246	3,204
1956	108,546,583	1,184	471	15,369,000	6,452,901	21,821,901	2,955	346	3,301
1957	104,351,541	1,244	502	[3] 15,753,000	6,463,103	22,216,103	3,023	390	3,413
1958 [4]	101,000,000	1,306	520	[5] 17,116,000	6,041,000	23,157,000	3,002	357	3,359
1959 [4]	104,000,000	1,356	540	17,326,000	6,098,000	23,424,000	2,887	366	3,253
Supplemental				2,100,000		2,100,000	413		413
Total, 1959	104,000,000	1,356	540	19,426,000	6,098,000	25,524,000	3,300	366	3,666

[1] At end of fiscal year.
[2] Includes $363,324 transferred from other funds.
[3] Includes $103,000 transferred from other funds.
[4] Estimated.
[5] Includes $290,000 transferred from other funds.

Mr. HORAN. I have this observation. I am concerned about this, and especially in the light of the pay raise.

I do feel that the increase in population and the increase in slaughterhouses and the facts you have set forth in your statement would require this subcommittee to give this matter a lot of deep thought.

Dr. CLARKSON. Mr. Chairman, I can assure you that the meat inspection program is receiving my personal attention.

Mr. ANDERSEN. Mr. Chairman, following Mr. Horan's remarks, I think it is something that we will have to consider carefully and frankly. Today, I do not know what the answer is, but I do agree with Mr. Horan that the subcommittee should give very careful study to this request and try to determine in their own minds what is satisfactory.

Mr. WHITTEN. In that connection we have a number of requests from Members of Congress concerning this matter, among whom are Congresswoman Sullivan, of Missouri, and Mr. Thomas J. Lloyd, president of the Amalgamated Meat Cutters and Butcher Workmen of North America, AFL–CIO. I would like to have those requests included in the record at this point.

(The above-mentioned documents follow.)

STATEMENT OF REPRESENTATIVE LEONOR K. SULLIVAN OF MISSOURI

JUNE 18, 1958.

Hon. JAMIE L. WHITTEN,
Chairman, Department of Agriculture Subcommittee, Committee on Appropriations, House of Representatives, Washington, D. C.

DEAR COLLEAGUE: It is my understanding that there is to be a supplemental appropriation bill coming before your subcommittee and also the full committee very shortly. I am intensely interested in the $2.1 million additional appropriation for the meat inspection program. While your subcommittee was considering the fiscal year 1959 appropriation bill some months ago, you will recall I appeared before you and testified in behalf of some $2 million more than the Department's original estimate—a figure which I was informed represented the best judgment of all the major groups directly engaged in meat production.

I have been hearing from many of the packing plants in my district, pointing out the need for increased appropriations for this inspection. I want to cite the case of the Sokolik Packing Co., recently built and opened as a "can pack plant" with all the latest equipment and modern packing methods. They are, however, limited to the number of cattle they can process per day because of a shortage of Government inspectors. The "heads" which require some sort of inspection must be taken from the processing line and trucked to another part of the plant in order to be inspected. On numerous occasions, this slows down the operation to a point where 34 men stand idle awaiting this operation, then, I am also informed, the heads must be returned to the line and rehung after they are inspected. This limits the number of cattle which can be handled and that is the big complaint. If another inspector could be placed in the plant, it is believed that more cattle could be handled which, in turn, would necessitate hiring additional employees and, of course, at this time when there is heavy unemployment in our area, this is very important.

I hope you and the members of your subcommittee will give careful consideration to this supplemental request of $2.1 million.

With kindest regards, I am

Sincerely yours,

LEONOR K. (MRS. JOHN B.) SULLIVAN,
Member of Congress, Third District, Missouri.

STATEMENT OF THOMAS J. LLOYD, PRESIDENT, AMALGAMATED MEAT CUTTERS AND BUTCHER WORKMEN OF NORTH AMERICA, AFL–CIO

MEAT AND POULTRY INSPECTION

My name is Thomas J. Lloyd. I am the international president of the Amalgamated Meat Cutters and Butcher Workmen of North America, AFL–CIO.

The AMCBW is a labor union with 350,000 members organized in about 500 local unions throughout the United States and Canada. The AMCBW and its locals have contracts with thousands of employers in the meat, retail, poultry, egg, canning, leather, fish processing, and fur industries.

On March 11, 1958, I testified before this committee on behalf of our union concerning meat and poultry inspection appropriations. At that time, I called attention to the need for more funds for meat inspection than the administration budget request had called for.

The fears I expressed about the inadequacy of the meat inspection budget request were also voiced by the representatives of consumer, farm, public health, and management organizations. All of these men—and many of them are experts on the meat industry—testified that the $17,326,000 when requested for meat inspection would lead to further deterioration of this vital service. Our union is glad to see that the administration has recognized the inadequacy of its previous request for meat inspection. It has sent a $2.1 million supplemental appropriations request to Congress and we now appeal to you, gentlemen of this subcommittee, to approve these additional funds.

The Meat Inspection Division is still in a serious crisis. It still does not have the funds to bring about a meaningful increase in its roster of inspectors.

The shortage of inspectors thus caused, continues to bring about slowdowns in the slaughtering of livestock. Recently, a corollary of this problem has developed. Some new plants which have opened have not been able to operate at capacity because they could not get the services of enough inspectors.

In either type of case, the situation is dangerous. Our union's research department calculates that unemployment in the meatpacking industry is at more than 10 percent. This is higher than the national average. The slowdowns add to this unemployment problem.

If these slowdowns are not sufficient evidence of the need for more inspectors, I should like to remind you of some of the statistics I submitted to you in my previous testimony. This data showed in detail that while the number of plants needing inspection increased 55 percent during the past 15 years, the total inspection force decreased 6 percent.

This shocking discrepancy between the need for inspection and the number of inspectors available is increasing. The meatpacking industry is continuing, and even accelerating, its decentralization process. The number of new plants needing inspection will continue to rise. This is indicated by the sharp increase in the number of companies submitting plans for new plants to the Meat Inspection Division for approval.

Meat inspection is one of the most important consumer-protective programs of our Federal Government. It came into existence more than 50 years ago because the public was shocked at the health hazards then prevalent in the processing and consumption of meat. Meat inspection has more than proved its worth. But it has been allowed to suffer from serious inadequacies in manpower. If these inadequacies are allowed to continue and to increase, this vital program will approach critical deterioration.

To avoid such a shocking condition, the Amalgamated Meat Cutters and Butcher Workmen of North America, AFL–CIO, strongly urges that you approve the $2.1 million supplemental appropriations request for meat inspection. These funds will allow the hiring of 350 more inspectors. They will bring the meat inspection program to the point where it will be able to fulfill completely its function of protecting and benefitting consumers, farmers, packinghouse workers and the meat industry.

Mr. WHITTEN. I want to thank you and your associates for your appearance before the committee.

SUBCOMMITTEE ON INDEPENDENT OFFICES

ALBERT THOMAS, Texas, Chairman

SIDNEY R. YATES, Illinois
JOE L. EVINS, Tennessee
EDWARD P. BOLAND, Massachusetts
CHARLES W. VURSELL, Illinois
HAROLD C. OSTERTAG, New York
CHARLES RAPER JONAS, North Carolina

WEDNESDAY, JULY 2, 1958.

NATIONAL SCIENCE FOUNDATION

WITNESSES

NATIONAL SCIENCE FOUNDATION

DR. ALAN T. WATERMAN, DIRECTOR
DR. PAUL E. KLOPSTEG, DEPUTY DIRECTOR
J. E. LUTON, ASSISTANT DIRECTOR FOR ADMINISTRATION
F. C. SHEPPARD, COMPTROLLER
WALTON M. HUDSON, COMPTROLLER'S STAFF

UNITED STATES NATIONAL COMMITTEE FOR THE INTERNATIONAL GEOPHYSICAL YEAR

DR. JOSEPH KAPLAN, CHAIRMAN, USNC–IGY, DEPARTMENT OF PHYSICS, UNIVERSITY OF CALIFORNIA
DR. ROGER R. REVELLE, MEMBER, USNC TECHNICAL PANEL ON OCEANOGRAPHY; CHAIRMAN, SPECIAL COMMITTEE ON OCEANOGRAPHY OF THE INTERNATIONAL COUNCIL OF SCIENTIFIC UNIONS; DIRECTOR, SCRIPPS INSTITUTION OF OCEANOGRAPHY, UNIVERSITY OF CALIFORNIA
DR. HARRY WEXLER, MEMBER, USNC–IGY; CHIEF SCIENTIST, ANTARCTIC PROGRAM; DIRECTOR OF METEOROLOGICAL RESEARCH, UNITED STATES WEATHER BUREAU
DR. MERLE A. TUVE, MEMBER, USNC–IGY; DIRECTOR, DEPARTMENT OF TERRESTIAL MAGNETISM, CARNEGIE INSTITUTION OF WASHINGTON
ALAN H. SHAPLEY, VICE CHAIRMAN, USNC–ICY; CHIEF, SUN-EARTH RELATIONSHIP SECTION, CENTRAL RADIO PROPAGATION LABORATORY, NATIONAL BUREAU OF STANDARDS
HUGH ODISHAW, EXECUTIVE DIRECTOR, USNC–IGY
B. VAN MATER, ADMINISTRATIVE OFFICER, USNC–IGY
THOMAS GIKAS, USNC–IGY STAFF
STANLEY RUTTENBERG, USNC–IGY STAFF

ASSOCIATED UNIVERSITIES, INC. (NATIONAL RADIO ASTRONOMY OBSERVATORY)

DR. LLOYD V. BERKNER, PRESIDENT, AUI; VICE PRESIDENT, CSAGI (SPECIAL COMMITTEE FOR INTERNATIONAL GEOPHYSICAL YEAR)

Mr. YATES. Gentlemen, will the committee come to order.

We are pleased again to have before us the National Science Foundation. We delight in the knowledge they bring us. We await their request with keen anticipation.

There are two items contained in House Document No. 394 relating to the National Science Foundation. One is for an additional $4,400,000 for the radio astronomy observatory at Green Bank, W. Va., and the other is $2,950,000 for the IGY. We will insert the part of the supplemental document relating to these items in the record at this point.

(The items follow:)

"NATIONAL SCIENCE FOUNDATION

"SALARIES AND EXPENSES

"For an additional amount for 'Salaries and expenses', $4,400,000, to remain available until expended."

This proposed supplemental appropriation is required to allow construction to go ahead on the National Radio Astronomy Observatory at Green Bank, W. Va. Actual bids have shown the cost will exceed previous estimates.

"INTERNATIONAL GEOPHYSICAL YEAR

"For an additional amount for 'International Geophysical Year', $2,950,000, to remain available until June 30, 1960.

This proposed supplemental appropriation completes funding of the United States International Geophysical Year program. Funds are required at this time to provide for unexpected additional costs of the observational program in the Arctic and Antarctic; to provide for the reduction and processing of a greater mass of scientific data from International Geophysical Year observations than earlier anticipated; to complete establishment of the United States World Data Center program; to initiate analysis and research based on International Geophysical Year data; and to permit the National Committee which directs the United States program to continue until June 30, 1959.

Mr. YATES. Apparently the estimates last year as to the costs for the telescopes were not exactly accurate.

SALARIES AND EXPENSES

NATIONAL RADIO ASTRONOMY OBSERVATORY

Will you tell us about your justification for this first item, Dr. Waterman? Who else will testify on funds for the National Radio Astronomy Observatory?

Dr. WATERMAN. Dr. Berkner, on this particular one. The other witnesses will testify on IGY.

Mr. YATES. Do you have a statement for us?

Dr. WATERMAN. I have no formal statement, Mr. Chairman.

Mr. YATES. Proceed, then, on the justification.

Dr. WATERMAN. This budget estimate we are requesting is in the sum of $4.4 million for the construction and planning for the radio astronomy telescope site. We regret that the increased cost of this 140-foot radio telescope has come through in its final form with an increase of this magnitude.

I might say with respect to the overall figures, that there are two major items in this increase. The first major item is the increased cost of engineering, design, and construction for the 140-foot telescope itself. That is $3.5 million more than the original estimate. This is based on actual bids which, when they come down to the matter of making a highly precise telescope, which is a novel thing for engineers to do, were all at least that much higher than the original overall estimates, based on ordinary engineering construction.

The other major item is for a residence hall and cafeteria of $454,000.

Mr. YATES. Before we go into the individual items we ought to put page 6 of your justifications in the record so we know what we are talking about.

(The justification follows:)

National Radio Astronomy Observatory—Comparison of previous and revised estimates

Capital and development costs	Total estimate in 1958 budget	Revised estimate	Increase (+) or decrease (−)
A. Site development:			
1. Site acquisition	$550,000	$650,000	+$100,000
2. On-site roads	190,000	133,000	−57,000
3. Water supply and sewer system	130,000	108,000	−22,000
4. Electric power system	379,000	285,000	−94,000
Subtotal, site development	1,249,000	1,176,000	−73,000
B. Buildings and housing:			
1. Control building (85-foot telescope)	58,000	37,000	−21,000
2. Maintenance building	72,000	162,000	+90,000
3. Laboratory and administration building	441,000	461,000	+20,000
4. Renovation of on-site buildings	25,000	68,000	+43,000
5. Residence hall and cafeteria	0	454,000	+454,000
Subtotal, buildings and housing	596,000	1,182,000	+586,000
C. Radio telescopes:			
1. 140-foot radio telescope:			
Fabrication and erection	----------	4,327,000	----------
Foundation construction	----------	423,000	----------
Engineering design and construction	2,200,000	----------	+3,506,000
Inspection	----------	275,000	----------
Control room	----------	215,000	----------
Escalation and contingency	----------	466,000	----------
Subtotal, 140-foot radio telescope	2,200,000	5,706,000	+3,506,000
2. 85-foot radio telescope	275,000	310,000	+35,000
3. RF components and electronic equipment	200,000	595,000	+395,000
Subtotal, radio telescopes	2,675,000	6,611,000	+3,936,000
D. Other observatory equipment:			
1. Shop and maintenance equipment	100,000	78,000	−22,000
2. Electronic test and repair equipment	50,000	100,000	+50,000
3. Office furniture and equipment	100,000	40,000	−60,000
4. Living-quarters furniture and equipment	0	77,000	+77,000
Subtotal, other observatory equipment	250,000	295,000	+45,000
E. Contingency reserve	94,000	0	−94,000
Operating costs	266,000	266,000	0
Total	5,130,000	9,530,000	+4,400,000

Dr. WATERMAN. On the balance of the items, Mr. Chairman, we have tried to economize in every possible way, some have been up and some have been down. The net effect of the other than the telescope and residence hall is an increase of only $10,000, so these are the two major items that I spoke about that have caused this increase.

As. Dr. Berkner can tell you in more detail, this telescope will be the most precise in the world, and be capable of the most accurate measurements, in spite of the fact that it is not the largest. There are at least 3 of an order of magnitude of 250 feet in diameter.

Mr. YATES. Actually, your justification looks to the construction of two telescopes.

Dr. WATERMAN. The other is a minor one which is a common thing in astronomy.

Mr. YATES. We are still building it and have to pay for it.

Dr. WATERMAN. Yes. That is very minor, though, compared to the big one.

Mr. LUTON. Yes. The 85-foot telescope is nearing completion, and involves only a $35,000 increase in cost.

Mr. YATES. Dr. Berkner, we will be glad to hear you on the 140-foot telescope.

STATEMENT OF LLOYD V. BERKNER

Dr. BERKNER. Thank you, Mr. Chairman.

The site has now been acquired and I might say that careful surveys shows that this is undoubtedly the best site that has so far been spotted in the world today. The gain by occupying the present site is equivalent to using a much larger telescope from the point of view of the power gain of the whole system. We have been on the site since September 3, 1957 and, as Mr. Luton has said, the 85-foot telescope is now nearing completion and will be completed this autumn.

The 140-foot telescope, after our original authorization, was completely designed in the engineering sense, and put out for bid, and the results that you see here represent the lowest bids that were received for the complete job.

The telescope is by far the most precise that has been designed to date, and will be capable of operating to frequencies as high as 10,000 megacycles per second, which will permit exploration of the sky through utilization of wavelength that have not been possible by any nation before with large telescopes.

The gain of the whole system will be sufficiently high so that it can be confidently anticipated that one can penetrate out into the universe, at least as far as visual telescopes, and in all probability, farther than visual telescopes penetrate into the universe at the present time, with respect to some of the galaxies at great distances.

One can anticipate that from this instrument it should be possible to advance astronomical theory and understanding very substantially.

The telescope has sufficiently rapid slewing rates in combination with great precision to permit the tracking of satellites, or other objects that may be launched from the surface of the earth.

We have completed the engineering in every detail. The shop drawings are now being prepared. The contractor states that he is ready to come on the site within 1 week as soon as we can give him the release to start the construction of the foundation, and we have every expectation that, if this supplemental is approved, the telescope would be completed late in 1959.

This, incidentally, is in advance of the prior schedule that we had expected and I might say, Mr. Chairman, is not unconnected with what is sometimes called the present recession, which has left certain factory facilities available that we had not originally anticipated would be available.

This accounts for the more rapid completion date.

Mr. YATES. All right.

On page 8 and 9 of the justifications there is listed telescopes which are located in other countries, and in other sections of our country.

ACQUISITION OF TELESCOPES

How were these telescopes acquired, by Government funds, by private funds, or otherwise?

Dr. BERKNER. Some have been acquired by Government funds, some by private funds.

Mr. YATES. What ones in this country were acquired by private funds?

Dr. BERKNER. The Carnegie Institution telescope, I believe, was acquired entirely by private funds. The California Institute of Technology telescope, I believe was built entirely by private funds.

Dr. WATERMAN. ONR. The Navy is supporting CIT.

Dr. BERKNER. Others I am sure came through Government contract in one way or another. None of these telescopes are designed to function with respect to many of the operations that can be done with the 140-foot telescope proposed here.

COMPARISON OF UNITED STATES AND SOVIET UNION PROGRAMS

Mr. YATES. In glancing through your justification, I fail to find the usual comparison with Russia, other than the statement that appears on page 9. Is Russia doing nothing in this field?

Dr. BERKNER. Russia has a very active program in this field. There are 3 major radio astronomy observatories of which we are aware, 1 at Leningrad, 1 at Gorki, and 1 in the Crimea. The Leningrad observatory has a partial parabola of 320 feet in diameter which is a very unusual type, of which we have a rather good description at the present time, and several of our radio astromoners have seen it closely.

In the Crimea there are a number of radio telescopes the largest of which is the 300-foot fixed telescope in the ground.

I only know of the Gorki establishment through personal conversations with Professor Poperov, who is the head of the Lebadov Institute. He indicated to me that they had very large telescopes there and the Lebadov Institute is designing very good radio receivers for that telescope, including the use of masers which we discussed last year with Professor Poperov at some length. I do not have complete details on the Gorki setup because this is one of the closed areas of the Soviet Union.

Mr. YATES. Do you have sufficient information to make a comparison between the projected United States telescope and their telescopes?

Dr. BERKNER. I would assume, I think safely, that the capability of the telescope we are proposing here would, in most fields, give us the best telescope anywhere at the present time. The telescope in Great Britain will be larger, but the efficiency of the telescope we are proposing here will be higher for short wavelengths. This, taken together with the site, is likely to give a larger equivalent area as far as the pick-up of the telescope is concerned. As far as the beam width is concerned, the higher precision at short wavelengths will give us a sharper beam width.

Mr. YATES. You do not anticipate any factor of obsolescence on this for some time to come?

Dr. BERKNER. Yes. I think there will be needs for a larger one but there wouldn't be of this type. I would think this telescope will be kept busy at least for 20 years.

Mr. YATES. I am a little uncertain as to your statement about the fact that you consider the possibility of better telescopes being developed. Will you be requesting our committee for funds for another telescope?

Dr. BERKNER. Certainly we will go ahead with studies of how larger telescopes can be built. We are quite certain at this time that another telescope, having the freedom that this telescope will have to scan the sky, to move around, et cetera, is probably relatively impossible to build, in any very much larger substantial size, but it is entirely possible that we will be able to discover ways of penetrating even farther in the universe by specialized telescopes of one kind or another. Just what form these are likely to take I couldn't say at the present time, because our studies haven't progressed far enough.

Mr. YATES. When you use the word "telescope" you refer to the radio telescope?

Dr. BERKNER. Yes.

SELECTION OF SITE FOR THE RADIO TELESCOPE

Mr. YATES. You stated that this is the best location that you could find in the country, and this contributed to the fact that you were able to build a telescope of such efficiency as to require only a paraboloid of 140 feet.

How did you happen to pick this place? As I read through the justification, I wondered about the possibility of minerals in the mountains detracting from your signals and why you did not go southwest or to some other area that is clear.

Dr. BERKNER. We deliberately selected this site because of the mountains, because the mountains protect the telescope site against unwanted signals that come in from the side.

Mr. YATES. What about severity of weather? I noticed in the justification this is one of the things that may cause some damage to your equipment.

Dr. BERKNER. Yes. This site was selected because it does have a very good weather record. The weather is very moderate. There is a history of lack of tornadoes and hurricanes in the area. The telescope, incidentally in a caged position is designed to stand 120-mile-an-hour winds.

JUSTIFICATION MATERIAL

Mr. YATES. I think we ought to put pages 7 through 13 in the record, and show the necessity for this justification.

(The justifications follow:)

National Radio Astronomy Observatory

	Appropriated to date	Additional amount requested	Revised amount
Fiscal year 1957 (actual)	$4,000,000	0	$4,000,000
Fiscal year 1958 (actual)	1,130,000	0	1,130,000
Fiscal year 1959 (estimate)	0	+$4,400,000	4,400,000
Total	5,130,000	+4,400,000	9,530,000

PURPOSE OF SUPPLEMENTAL ESTIMATE FOR THE NATIONAL RADIO ASTRONOMY OBSERVATORY

A supplemental estimate of $4,400,000 for fiscal year 1959 is requested for the National Radio Astronomy Observatory in order to complete construction of the 140-foot radio telescope; to provide for a residence hall and cafeteria; for increased costs of building construction; and for procurement of additional essential electronic equipment.

The amount requested, together with the $5,130,000 appropriated in fiscal years 1957 and 1958 will make a total of $9,530,000 which will provide for a radio astronomy observatory incorporating an 85-foot radio telescope, a 140-foot radio telescope, necessary laboratory, office and maintenance space, quarters for visiting scientists and for permanent staff members, highly specialized electronic instrumentation and repair equipment, and operating costs through fiscal year 1958. Operating funds for fiscal year 1959 are included in the Foundation's fiscal year 1959 budget estimate.

DEVELOPMENTS LEADING TO A NATIONAL RADIO ASTRONOMY OBSERVATORY

Importance of radio astronomy.—In 1932 Karl G. Jansky, an engineer with the Bell Telephone Laboratories, in studying the interference of thunderstorms with communications, discovered a hitherto unknown type of radiation that penetrated the earth's atmosphere. After much careful study he concluded that the radio interference or noise was from the Milky Way passing overhead. Thus was discovered radio astronomy—which is astronomy in the truest sense, except that the observations are made at radio wavelengths with electronic equipment rather than at optical wavelengths with the eye or analogous devices. It is now known that the atmosphere is transparent to wavelengths ranging from 1 centimeter (a fraction of an inch) to more than 10 meters (about 11 yards). These radio wavelengths are more than 10,000 times longer than optical wavelengths; therefore, none of the optical observing devices may be employed effectively and the development of suitable equipment has been a limiting factor in the growth of radio astronomy. Adequate instrumentation is further complicated by the range of radio wavelengths that can penetrate the atmosphere. The range of optical wavelengths—from blue to red—to which the eye is sensitive corresponds to approximately 1 octave on a piano keyboard, whereas the 1-centimeter to 10-meter range available to radio astronomy corresponds to 10 octaves. Hence a variety of techniques must be employed, both in the antenna systems and the receivers and other electronic devices, to cover the entire observable band.

Areas studied by means of radio astronomy.—Although radio astronomy is but a quarter century old, it has already revealed much new information—about the solar system, the Milky Way or galaxy of which we are a part, and of external galaxies. Radio signals are received from a variety of sources, including the sun, the planets, our own galaxy, and galazies in outer space 200 million light-years away. In addition, extensive study is made of hydrogen radiation at the 21-centimeter line.

A significant fraction of the total material in the universe is in the form of quiescent clouds of hydrogen gas, lying in the interstellar regions of our galaxy and other galaxies. These clouds emit radio radiation in a narrow band of wave lengths centered at a wavelength of about 21 centimeters. Studies of this 21-centimeter line emission are providing new information about the properties of galactic systems, and about the relationships between stars and interstellar gas.

American progress in radio astronomy instrumentation.—Despite the early American impetus in radio astronomy—beginning with Jansky and including contributions of Burke, Bok, and Ewen—rapid progress in other nations has created a situation that requires exertion on the part of this country to achieve and maintain a position in the forefront of radio-astronomy research. Numerous steerable paraboloids—some of very large size—have been constructed in other nations, as well as other types of antenna arrays of high precision. The following summary of major instrumentation in other countries gives indication of a high degree of progress:

England: A 250-foot steerable paraboloid plus several small telescopes.
Australia: Two Mills cross arrays of 1,600-foot and 3,000-foot dimension. A 200-foot steerable paraboloid is in design phases.
France: Some arrays in operation.

Russia: A number of small telescopes, one steerable altazimuth mount telescope of intermediate size (approximately 50 to 60 feet) and a 300 by 10 foot fixed paraboloid telescope with tiltable plates.
Netherlands: Steerable paraboloid of about 80 foot diameter.
East Germany: A 100-foot paraboloid steerable in only one direction.
West Germany: A 75-foot steerable paraboloid.
Canada: A special linear array 200 feet long for solar work.

At the present time, the United States has no radio telescope of size comparable to the larger ones indicated above. At the present time, exclusive of the proposed 140-foot telescope at the National Radio Astronomy Observatory, the following instruments are in operation or underway:

Harvard: 28-foot and 60-foot steerable paraboloids.
Naval Research Laboratory: 50-foot and 84-foot steerable paraboloids.
Carnegie Institution of Washington (OTM): 1,800-foot and 2,400-foot arrays.
University of Michigan: 28-foot and 85-foot steerable paraboloids.
Ohio State University: Fixed standing paraboloid 70 feet by 700 feet (under construction).
California Institute of Technology: Two 90-foot steerable paraboloids.

Planning for the National Radio Astronomy Observatory.—The need for large radio telescopes to augment the work of American astronomers was clearly brought out at an international conference on radio astronomy, sponsored by the National Science Foundation, California Institute of Technology, and Carneigie Institution of Washington, and held at the Carnegie Institution of Washington in January 1954.

As a sequal to the Washington conference and informal discussions among scientists, Associated Universities, Inc., was asked to undertake, on behalf of radio astronomers, responsibility for construction and operation of more adequate instruments for radio astronomy. A conference of United States radio astronomers, held in New York on May 22, 1954, enthusiastically endorsed this proposal, and AUI undertook a series of studies sponsored by the National Science Foundation.

In August 1956, a report was submitted, Plan for a Radio Astronomy Observatory, which included the results of a survey for a suitable site, studies of telescope designs, and a plan for the establishment and operation of the Observatory.

A contract was signed on November 17, 1956, between the National Science Foundation and Associated Universities, Inc., for the construction and operation of the National Radio Astronomy Observatory. At the present time a total of $5,130,000 has been appropriated for the National Radio Astronomy Observatory. The request for supplemental funds is set forth in the following sections.

FACTORS AFFECTING COST OF THE NATIONAL RADIO ASTRONOMY OBSERVATORY

More than 85 percent of the increase occurs in connection with the construction of the 140-foot radio telescope and the related electronic equipment. A number of factors not contemplated at the time of the initial estimate have materially influenced the increase in cost:

First, after 3 years of intensive study it has been found to be possible to build a much more precise instrument than initially contemplated. The need for and desirability of tightening specifications to secure increased precision has been soundly demonstrated by the serious disagreement between British and Australian scientists in the interpretation of their radio astronomy observational data. The disagreement apparently stems from errors resulting from the use of large but relatively imprecise radio telescopes. As a result of intensive design study it has been possible to design a 140-foot instrument of high precision having an accuracy equivalent to existing instruments of a size up to 250-foot diameter (the size of the present British radio telescope at Jodrell Bank previously mentioned).

Second, the initial estimate was prepared, using experience with smaller telescopes, before the design of the 140-foot instrument was fixed. The cost was developed using the customary engineering basis for heavy steel construction—the gross tonnage of steel involved. Because of the unique design of the instrument, the close tolerance involved, and the general inexperience of contractors with similar construction, this has proven to be an inadequate method of estimating.

Third, since the development of the initial estimate in 1955 there have been very substantial advances in the price of materials and specialized metals involved in the construction of the telescope. (Bureau of Labor Statistics cost indices indicate that between mid-1955 to September 1957 prices for structural steel had risen 32 percent, aluminum 21 percent, finished aluminum sheet 19 percent, and gross hourly wages in contract construction had risen 14 percent.

Fourth, the isolated location of the most desirable site for the observatory, located at Green Bank, W. Va., involves more costly shipping and skilled labor problems than were visualized at the time of the initial estimate.

IMPORTANCE OF SECURING ADDITIONAL FUNDS

Although a firm bid is in hand for the construction of the 140 foot telescope it has been necessary to delay entering into a contract until the additional funds required are available. The lowest acceptable bid, from the E. W. Bliss Co. of Canton, Ohio, would provide for fabrication, construction, and election of the 140 foot telescope and for construction of the foundation of the telescope at a total cost of $4,750,000. The price as negotiated was based on immediate acceptance and is subject to escalation based on the BLS index for labor and materials from December 1, 1957, to the beginning of the work. Although a contract for fabrication and construction of the telescope cannot be let until additional funds are available, the Foundation has authorized Associated Universities, Inc., to enter into an agreement with the Bliss Co. to prepare the detailed engineering drawings with the option to enter into a contract for construction when funds are available.

In the progress of any science the provision of facilities less effective than the best available at the time would entail a substantial lag in progress and loss of leadership. The 140 foot telescope which can be built today is far superior to that which was visualized at the time the initial estimates were made. Redesigning of the telescope or effecting major changes in the specifications would not result in substantial savings, and would sacrifice highly desirable performance characteristics.

SUMMARY OF CURRENT PROGRESS

The contract which the National Science Foundation has signed with Associated Universities, Inc., provides for construction of the National Radio Astronomy Observatory and for its operation for a period of 5 years. After an intensive survey of the United States described in the June 1956 publication Plan for a National Radio Astronomy Observatory, Green Bank, W. Va., was selected as the site affording the greatest protection from radio and other electric interference. Progress to date on the site acquisition, development, and initial construction of the observatory is summarized below.

Site acquisition

The site of the observatory will comprise about 2,700 acres. Substantially all of the land has either been acquired to date, or condemnation proceedings are in court for the parcels of land to which title has not been acquired. Acquisition of the land has been handled for the Foundation by the United States Army Corps of Engineers. In order to assure adequate protection from radio and other interference, the Federal Communications Commission is presently considering a ruling which would make the general area of the site a "quiet zone," and the West Virginia State Legislature is considering delegation of zoning authority to Pocahontas County that would permit rulings retaining the rural classification of the area. The natural advantages and isolation of the area coupled with the further advantages anticipated from the cooperation of FCC and the West Virginia Legislature will undoubtedly make Green Bank, W. Va., the foremost center for research in radio astronomy in the United States.

Road and parking areas

A road approximately 1½ miles in length has been constructed centrally through the site. The road is complete except for the final surfacing which cannot be accomplished until the heavy construction in connection with the 140 foot telescope is finished. Parking space at the site of the laboratory and administration building and at the 85 foot telescope site is at the same stage of completion as the road. Rough grading of the 140 telescope site was accomplished in connection with the construction of the road.

Water and sewage

A well for immediate water supply purposes has been drilled and is in operation. Another 8 inch well has been drilled and capped awaiting construction of the works area.

Electric power

Bids for installation of the power system are expected to be received soon. Completion of the work is tentatively set for June 15, 1958.

85 foot telescope control building

The contract for construction of the control building for the 85 foot telescope has been let with a completion date of June 1, 1958 established.

85 foot telescope and instrumentation

A contract has been let for construction and erection of the 85 foot telescope. The telescope is scheduled to be in operation by October 15, 1958. A contract for construction of the foundation for the telescope will be let in the near future. A 21 centimeter receiver has been completed by the contractor, Airborne Instruments Laboratory, and will be delivered to phase in with completion of the 85 foot telescope. A 3 centimeter traveling wave tube receiver is on order with delivery promised for early fall.

Renovation of houses on the site

Four farm houses have been completely renovated for temporary use as living quarters, laboratory and office space, and work is currently underway or plans have been made for the renovation of the additional houses to serve as temporary residences for staff members or for visiting scientists. All renovation is scheduled to be completed by September 1, 1958.

140 foot telescope

Invitations for proposals for fabrication and erection of the 140 foot telescope were issued on August 1, 1957 to about 100 different companies. Over 40 proposals were received of which 9 were for the entire job. Acceptable bids ranged from $5.6 to $8.5 million. Subsequent negotiations to ascertain savings that could be made without adversely affecting the performance of the instrument resulted in downward revisions. The initial bid from the E. W. Bliss Co. was reduced to $4,750,000 in the process of negotiation. Although the Bliss Co. could have begun work on the construction of the telescope immediately it has been impossible to sign a contract because additional funds are required.

As previously stated, the E. W. Bliss Co. has been authorized to proceed with detailed engineering drawings of the 140 foot dish, with an option to initiate fabrication, construction and erection of the telescope provided funds are made available for this purpose. The Bliss bid is subject to escalation based on the Bureau of Labor Statistics index for labor and materials from December 1, 1957 to the beginning of the work.

PURPOSE OF 85-FOOT TELESCOPE

Mr. YATES. What is the purpose of the 85-foot telescope we are constructing? Is this a student telescope of some kind?

Dr. BERKNER. It is an auxiliary telescope. In itself it is capable of doing very distinguished research, but the cost of a large telescope is such that one cannot justify the development of equipment, or time spent for general development work on the big telescope. You simply have to keep it busy on the kind of projects which it can do which other telescopes cannot do. Therefore, when the big telescope is available, the smaller telescope will be used not only for research in its own right but also for the testing of equipment, for the testing of feeds, for testing of other equipment which eventually will go into the telescope when it is perfected. In the developing of traveling wave tube receivers, which are very low noise wave receivers et cetera, we require a lot of telescope time and the smaller telescope will be used for this purpose.

When the equipment is perfected it will be moved over into the larger telescope. I would point out that both telescopes have precisely the same ratio of focal length and diameter. When you develop a feed for one telescope it can be moved over to the other.

Dr. WATERMAN. In astronomy in general, where you have a large telescope and the cost of operation is heavy for that and it has its own program one has associated with it a small telescope that can do the minor things and prepare the way for observations with the big ones.

Mr. YATES. Who will be using these telescopes? How many astronomers do we have in this country?

Dr. BERKNER. The whole facility is designed to provide a supplementary facility to the universities and institutions doing research in radio astronomy in the country. There is a small permanent staff at the observatory to manage the telescope and of course to carry on research in their own right, but the facility is being designed so that visiting professors or visiting scientists can prepare or plan experiments for the large telescope at their university and then come to the site and carry out the experiments under the most favorable circumstances.

The whole facility is designed to provide a large-scale facility, in the most economical manner for the Federal Government, to provide research tools and facilities not available at the universities and other institutions. Thus, an institutional astronomer who feels that he needs a supplement to his own research facilities, will have available the National Radio Astronomy Observatory facilities, which are much more adequate than anything that an astronomer can obtain in his own institution with regard to size of telescope.

Mr. YATES. Have you an idea as to how many astronomers or how many students of astronomy there are in this country who might be using this facility?

Dr. BERKNER. Yes. We have, as a mater of fact, already set up a schedule of probable users of the telescope.

I would be glad to make this available to the committee for their record, but the astronomers have been polled and the probable experiments that will be conducted, the probable schedule of timing with respect to the telescopes, is already somewhat in hand, and could be made available to you.

Mr. YATES. I think we will have general questions from the committee on this item.

INCREASE IN CONSTRUCTION COSTS

Mr. OSTERTAG. One general question I had was with regard to cost, or actually the system under which you operate.

As I understand it, this budget request is for a supplemental, or an additional appropriation of $4.4 million, which is primarily for construction.

Dr. BERKNER. Yes, sir.

Mr. OSTERTAG. There are a number of other small items that go with this additional fund, and the reason for it is that the costs have exceeded original estimates. Is that correct?

Dr. BERKNER. That is correct.

Mr. OSTERTAG. On page 11 of your justification it points out that bids have been received and the lowest acceptable bid is in the amount

of $4,750,000. That is for construction, fabrication, erection of the telescope, and for construction of the foundation of the telescope. Is that generally correct?

Dr. BERKNER. That is correct.

Mr. OSTERTAG. If this appropriation is made and the money is made available, does that mean that you can proceed on the basis of existing bids?

Dr. BERKNER. Yes, sir.

Mr. OSTERTAG. In other words, there is no turning back to embark on this project from the beginning, but actually you need the money to supplement the money you have in order to accept these bids?

Dr. BERKNER. Yes, sir; that is correct. I can be a little more explicit.

Because we wanted to be very sure of these prices, the foundation authorized us to proceed through detailed engineering of the telescope, so that every point on the bid could be confirmed. This was the first phase of the contract with the E. W. Bliss Co.

The second phase of the contract with the Bliss Co., that is to proceed with construction, will not be started unless this supplemental appropriation is made. But a firm contract is available by which the second phase can be released if and when the Congress appropriates the funds.

Mr. OSTERTAG. The second phase——

Dr. BERKNER. Being the fabrication and construction of the telescope.

Mr. OSTERTAG. The overall total cost of this project is in the neighborhood of about $9 million?

Dr. BERKNER. Yes, sir.

Mr. OSTERTAG. So the additional $4.4 million is required to take up the requirements involved in the second phase of the project?

Dr. BERKNER. That is correct.

Mr. YATES. I am sorry; I forgot to call upon our distinguished chairman to ask him whether he had any questions.

SOVIET UNION PROGRAM

Mr. THOMAS. Thank you, Mr. Chairman.

I would like to ask the doctor: We read in the Saturday or Sunday papers where the Russians were going to establish, not a radio telescope but a mirror-prism telescope with 1,300 mirrors. They are going to harness the sun, have a boiler on a tower 130 feet high. Out of that they will produce 2 million kilowatt-hours a year of energy. Did I read that correctly?

Dr. BERKNER. I couldn't confirm the precise number. I read a story to that effect.

Mr. THOMAS. Is that stage of the art that practical?

Dr. WATERMAN. This was discussed at an international meeting on solar energy, I think, last year. The Russians spoke of this. Most of those present expressed skepticism as to whether the thing could be managed.

Mr. THOMAS. It was over in Armenia.

Dr. BERKNER. Yes, sir.

Mr. THOMAS. I presume it was on a high plateau, dry, hot and clear, 11 or 12 months out of the year.

Dr. WATERMAN. This was discussed at this international conference. The plan was presented in the early stages.

Mr. THOMAS. Did I understand you to say everybody was skeptical of it?

Dr. WATERMAN. Most people were skeptical this could be achieved, or done efficiently. Of course it has reached a later stage now. I am not sure how much we know about it.

Mr. THOMAS. Was this window dressing, publicity, propaganda by the Russians? Does anyone know there is actually a project being undertaken?

Dr. WATERMAN. What we hear is that they are trying to build it.

Mr. THOMAS. Can we contact our proper sources and find out?

Dr. WATERMAN. I would be glad to try to do that.

Mr. THOMAS. We might see what we can do along this line in this country.

Dr. KLOPSTEG. If the figure is 2 million kilowatt-hours a year——

Mr. THOMAS. I may be wrong.

Dr. KLOPSTEG. This may be right, but this means the installation would be an installation of only about a thousand kilowatts because it would depend on sunshine and total number of sunshine hours even in a location where there isn't much cloudiness would not be much over 2,000 hours, either.

Mr. THOMAS. It is a relatively small plant.

Dr. KLOPSTEG. Yes, sir.

Dr. BERKNER. One must recall in all of these solar energy projects, at least in the United States, that the economics of the situation are an important aspect. That is, what is the cost per kilowatt-hour to do the job?

CAPITAL AND DEVELOPMENT COSTS

Mr. JONAS. Doctor, what have you used the $5,130,000 for that we have already appropriated?

Dr. BERKNER. This is completely outlined on page 6.

Dr. WATERMAN. This is itemized on page 6, Mr. Chairman.

Dr. BERKNER. Under five categories, A to E.

Dr. WATERMAN. This included $2.2 million for engineering and design and construction of the telescope; for lab building, $441,000—these are big items—site acquisition, site development total $1,249,000, wits $550,000 for the actual site acquisition et cetera.

The observatory equipment amounted to $250,000 here. The 85-foot telescope originally had $275,000 for it, and the components and electronic equipment for the 85-foot telescope, $200,000.

Mr. THOMAS. Will you yield? Mr. Jonas?

Mr. JONAS. Yes.

Mr. THOMAS. These are no-year funds. We know our distinguished friend, Dr. Berkner, is awfully close to this. I do hope that the committee will give you all the money you need for your foundation work and for your telescope, and that essential equipment that you need.

On your road and your ancillary buildings, let's not break this thing's neck before it gets started. Let's hold that down to the bare minimum.

If these figures can be reduced substantially, let us do it. Let us not make it too plush and get it killed before we get it started. Let us spend all the money that is needed on the telescope and on the auxiliary equipment, but when you come to your building, and access

roads and this, that, and the other, let us forgo that for a year. I am talking sense to you, whether you agree or disagree.

Dr. BERKNER. Our problem is the following, Mr. Thomas: The site was deliberately selected so that it would be very inaccessible and, therefore, quiet from the point of view of radio noise et cetera. This gives us very great gains with respect to the operation of the telescopes themselves.

Mr. THOMAS. You have to have roads there, I know. You can build roads for $10,000 a mile or one for a thousand dollars a mile, and it will still bring you up and take you down.

Dr. BERKNER. The only difficulty is we have to carry heavy equipment in over these roads. I am reminded of the visit I made to the British radio telescope in which we discussed this matter of roads. Someone remarked the road wasn't very good into the telescope and the director of the observatory said the road had been paid for whether it is there or not. What he really meant was the cost of digging out mired trucks, et cetera, and bringing heavy equipment to the site—and this is extremely heavy gear—had more than cost the price of putting in a road of adequate type.

Actually, the roads we need are at this moment already in place to carry in the gear. These roads have been constructed very economically. I think the total cost of the roads actually came well below the estimates, and they are not fancy, paved roads.

Mr. THOMAS. How many miles of roads and what is the cost of the road?

Dr. BERKNER. I think we built about a mile and a half of road. It cost about $133,000. It is built for the 18,000 pound per axle loads that have to be brought in there. It is not paved. It is a semi-finished road, simply designed as a minimum road to carry the load.

I think this is a pretty good price for a road.

Mr. JONAS. Is it true that almost the entire amount of the supplemental request is involved in the construction of the 140-foot telescope?

Dr. BERKNER. Yes, sir. There is only $10,000 difference between the original estimates and the present estimate, excepting only for two items: The telescopes and related equipment and the residence hall cafeteria.

Mr. JONAS. You had $2.2 million in the 1958 budget for engineering, design, and construction on the telescope.

Dr. BERKNER. Yes, sir.

Mr. JONAS. You are jumping that up to $4,327,000. Is that due to a speedup, or to a revised estimate on cost, or what accounts for the increase?

Dr. BERKNER. When the original estimate was made, no telescope of this kind had ever been designed, or built, before, and we had only to depend upon a very rough engineering estimate based on the tonnages of material that would probably have to go into the telescope. Since the time of those estimates, some detailed engineering has been done, and we have been able to determine for the first time how precise the telescope could be built, and what guaranties of precision could be made.

Mr. JONAS. In other words, $2.2 million was just a rough estimate?

Dr. BERKNER. Yes, sir.

Mr. JONAS. Not based on anything except estimates?

Dr. BERKNER. That is right, because we did not have money at that time to do the detailed engineering.

TENTATIVE CONSTRUCTION CONTRACT

Mr. JONAS. Do you have tentative contracts signed with the Bliss Co.?

Dr. BERKNER. We have.

Mr. JONAS. Which establishes the cost of $4,327,000?

Dr. BERKNER. $4,750,000.

Mr. JONAS. $4.4 million is what you are asking for.

Dr. BERKNER. Yes, sir, but the actual price of the telescope is $4,750,000.

Mr. OSTERTAG. It will meet that contract, will it?

Dr. BERKNER. Yes, sir. It is a firm contract.

Mr. JONAS. Not necessarily. It has an escalation clause in it.

Dr. BERKNER. We have a small contingency for escalation, but we think we can estimate the escalation very accurately because we know the terms of the contract at the present time.

Mr. JONAS. Does it provide for an increase in cost in the event of a rise in the cost-of-living index? How can you determine that in advance?

Dr. BERKNER. The escalation ceases if the contract is signed before a certain date. In other words, the signing of the contract terminates the escalation.

Mr. JONAS. Does this $9,053,000 revised estimate include everything, what we refer to as a turnkey job for construction?

Dr. BERKNER. This will be a completely operational job.

Mr. JONAS. This amount of money will complete the entire project, a turnkey job?

Dr. BERKNER. Yes, sir. I would not want to be in a position of saying we would never come back for more, because, as Mr. Thomas knows very well, if certain steps can be taken to improve our ability to do research, he would expect us back.

Mr. JONAS. That would depend upon whether you want to build an additional telescope?

Dr. BERKNER. That is correct, sir, or, perhaps, to improve the capabilities of the present telescope for better research.

Dr. WATERMAN. It could be that new components might be in order.

Mr. JONAS. You have in the estimate all of the known anticipated costs of engineering, design, and construction, to complete the project as it is now contemplated?

Dr. BERKNER. That is correct.

ANNUAL OPERATING COSTS

Mr. JONAS. What will be the annual operating costs?

Dr. BERKNER. The annual operating cost for the next year, as I recall it—Mr. Luton, I believe, has this number, but I believe it is $400,000 for the next year.

Mr. LUTON. $400,000.

Dr. BERKNER. When the telescope is fully utilized this will go to about $750,000.

Mr. JONAS. We can anticipate that the operating costs will be between half a million and a million a year?

Dr. BERKNER. That is correct, sir.

Mr. JONAS. This is part of your big program of support of science, is it?

Dr. BERKNER. Yes, sir.

Mr. JONAS. Of which you have already received—you haven't received it yet, but the House and Senate bills have passed it and there is a slight difference between the 2, as I recall, of about $25 million; but you have about $55 million this year for support of science.

Dr. WATERMAN. Yes, for the support of science in our regular appropriation.

Mr. JONAS. Your original estimate was $55,069,000 and you are now asking to increase that to $59,469,000 to take care of the $4.4 million supplemental request?

Dr. WATERMAN. I think those figures are correct.

Is that right, Mr. Sheppard?

Mr. SHEPPARD. Yes.

Mr. YATES. I felt there might be some question as to the need for the facility. Your questioning was good, in pointing out the basic costs that are a part of this project.

In the appropriation for the 1959 budget, on page 64, the operating expenses for the national radio astronomy facility are shown to be $400,000, and it is broken down as follows:

Professional salaries (12)	$140,000
Administrative and clerical salaries (16)	89,000
Travel	15,000
Communications	8,000
Power	20,000
Materials and supplies	50,000
Employees' insurance and retirement	23,000
Miscellaneous expenses	55,000
Total	400,000

Mr. YATES. I think this is the point that Mr. Jonas had in mind. I think it is worth while to show what the expenses will be.

How will the Observatory be staffed? I don't recall what your testimony was before the committee earlier this year. This indicates that you are going to have certain professional salaries, certain administrative and clerical salaries. Will you have a permanent staff there at all times?

Dr. WATERMAN. This is of course in the contractor's hands because we are not operating this. The contractor's plans call for a regular staff and of course, this includes not only the director, and what scientists he requires, but also the technicians and maintenance people which go along with that.

Mr. YATES. In the justification, however, that was a contract for a few years. Was your contract 5 or 6 years with the universities?

Dr. WATERMAN. Five years.

Mr. YATES. What happens after that? Would you renegotiate the contract with the same group?

Dr. WATERMAN. If it were submitted to us we would consider it at that point, and consider the scale on which it should be continued.

Presumably it would continue under the same management but they would have ideas as to what additional things they might require or any changes in the setup.

Mr. YATES. What overall supervision do you have over the staffing?

Dr. WATERMAN. This is in the hands of the Director and the contractor.

Mr. YATES. Who is the Director?

Dr. BERKNER. I am Acting Director at the present time.

Dr. WATERMAN. Dr. Berkner is Acting Director under the contract.

Mr. YATES. How long will you act?

Dr. BERKNER. We expect to appoint a Director of the Observatory later this year. We have not appointed a Director so far, for the reason that the large-scale research could not be commenced until the financial arrangements are completed. As soon as these are completed a Director will be appointed.

Mr. YATES. I see.

Dr. WATERMAN. Dr. Berkner can answer questions about staffing.

Dr. BERKNER. May I say with regard to supervision. the contractor has, under the contract, a national radio astronomy advisory committee. This committee is appointed by the contractor, with the knowledge and consent of the National Science Foundation, and consists of distinguished astronomers and other scientists interested in the field of radio astronomy.

The advisory committee will review the research programs underway at the Observatory, and also will review proposals with regard to the policies controlling research. It acts as what one might call a visiting committee to review the effectiveness of the operation and reports annually on this subject.

Mr. JONAS. You don't have any positions that you are asked for in this?

Dr. WATERMAN. None whatsoever.

Mr. YATES. You merely approve the contract.

Dr. WATERMAN. Yes, sir.

Mr. YATES. In your supervision over the contract you determine whether or not it is going to be efficiently and economically operated?

Dr. WATERMAN. That is right.

STAFFING PLAN

Mr. YATES. It is your responsibiluity to see there won't be overstaffing and that it will carry on the purposes of the National Science Foundation?

Dr. WATERMAN. Yes.

Dr. BERKNER. I have the staffing plan here, Mr. Chairman.

Mr. YATES. This may go in the record at this point.

(The data referred to follow:)

National Radio Astronomy Observatory personal services, 1957–60

Description	Jan. 1, 1958	1958	1959	1960
Director	0	0	1	1
Deputy Director	1	1	1	1
Staff astronomers	2	3	4	6
Engineers	2	3	5	6
Site manager	1	1	1	1
Business manager	1	1	1	1
Assistant business manager	0	0	1	1
Librarian	0	1	1	2
Technicians	1	2	6	15
Secretary	4	5	8	10
Clerks	1	3	8	12
Mechanics and laborers	1	6	10	15
Total	14	26	47	71
Plus visiting astronomers	1	1	7	41

SITE DEVELOPMENT

Mr. YATES. Let us get to site development, on page 14. Pages 14 and 15 may go in the record at this point. (The justification follows:)

A. SITE DEVELOPMENT

Total estimated cost of site development

1. Site acquisition	$650,000
2. On site roads	133,000
3. Water supply and sewer system	108,000
4. Electric power system	285,000
Total	1,176,000

A net decrease of $73,000 is anticipated below amounts reflected for site development in the fiscal year 1958 budget. Although the cost of acquiring the site has proven to be somewhat in excess of earlier estimates, major savings have been effected in the construction of roads and parking areas, estimates for the water supply and sewer system, and the electric power system. It is planned to use the savings in this category to partially offset the increase in cost of building construction. As one of the principal limiting factors in radio astronomy is man-made radio interference—broadcasting stations, radar, aircraft, industrial machinery, motor vehicle generators, even neon lights and home appliances—the choice of a site had to take into consideration an area where a low level of radio "noise" exists. Another factor considered was selection of a site where extreme weather conditions—strong winds, snow, and ice—would not subject the exposed instruments to severe hazards. The site at Green Bank is located in a sparsely populated valley surrounded by a protective range of mountains.

The site will consist of about 2,700 acres. Land, as mentioned earlier, is being acquired for the observatory by the Army Corps of Engineers. All of the land has either been acquired, or condemnation proceedings are in process.

The increase in site acquisition cost has occurred for two primary reasons. First, the initial estimate was based on a hypothetical site while the actual site is located in an area where land is being actively used for farming and grazing. Second, the initial estimate of the minimum acreage required for protection of the facility required adjustment in the course of acquisition. In those cases where only land on which farm buildings were located lay within the planned site area, it became necessary to acquire the entire parcel, so that actual acreage acquired will be somewhat greater than contemplated.

Development has progressed satisfactorily. The road has been completed excepting for the final surfacing which cannot be accomplished until heavy con-

struction in connection with the 140-foot telescope is completed. The site for the 140-foot telescope has been rough graded in connection with the road construction. Two wells have been drilled as a part of the water supply system. Bids for the electric power system are expected to be solicited soon with a planned completion date of June 15, 1958.

A map providing details of the site layout is included on the following page, showing location of the access road, telescope and building sites, and location of the utilities systems.

Mr. YATES. I note that you have 2,700 acres that you have acquired, at a cost of $650,000?

Dr. BERKNER. Yes, sir.

Mr. YATES. The land was acquired by the Corps of Army Engineers on your behalf?

Dr. BERKNER. That is correct, sir.

Mr. YATES. How did you happen to pick this place? Who did the surveying for it?

Dr. BERKNER. The survey for the site was carried out over a period of about 18 months, by our own staff.

Mr. YATES. When you say by our own staff——

Dr. BERKNER. By the Associated Universities staff, on behalf of the National Science Foundation and included a study of 30 different sites as possibilities for The National Radio Astronomy Observatory. These 30 sites were boiled down to five sites, which were clearly superior to any of the others, and then these were surveyed from many points of view:

From the detailed point of view of weather, from the detailed point of view of the radio noise levels that were involved, et cetera. It was determined early in the study that a sufficient acreage would be necessary to prevent any radio interference that might occur in the vicinity of the antennas, that there should be sufficient area to protect the antennas. Actually the protection is much more than this 2,700 acres indicates, because the site was selected to be in a Forest Service area. We have a very large area of Forest Service land adjacent to the site, and on all sides there are mountains, which shield and thus give protection some miles in every direction.

Mr. YATES. If our mathematics are correct, you paid $650,000 for 2,700 acres, which amounts to $240 an acre. It seems like a rather high sum for an isolated area, does it not?

Dr. BERKNER. This is a flat valley bottom that has been used in the past for farming. It was under farming, or under controlled grazing, privately owned. It included the complete cost of surveys, of title research, et cetera.

Mr. YATES. Can the committee be assured this cost per acre average market price for that area?

Dr. BERKNER. This is certainly true. If you examine the market prices out there you will find we got the site rather cheaply. Mr. Luton has studied this carefully and may have some comment on this.

Mr. LUTON. AUI, without telling the people that the Government was interested in this land, had some checks made and took some options on a large amount of acreage there in the very beginning. The prices that have been paid for the land have run very close to the prices of the options taken, within about 1 percent.

Mr. JONAS. I believe it is estimated the Federal Government already owns about 27 or 28 percent of all the land area in the United States.

With all that land being owned, it would seem to me that you might have found 2,500 acres somewhere on which you could have erected this telescope without spending $650,000 to buy 2,700 more acres.

Dr. BERKNER. We looked hard and could not find it. If one had selected the next best site it would have cost about $20 million for an operationally equivalent telescope system with the same overall pickup. It was much more economical to buy land which would permit the erection of a cheaper telescope.

The second best site was in the southern part of Virginia. The third was a site in the vicinity of Massanutten Mountain. I believe an earlier hearing actually contains the record of our search for this site.

Mr. OSTERTAG. What makes the tremendous difference in cost on the different sites?

Dr. BERKNER. Because if the mean noise level around the site increases, the effectiveness of the telescope goes down. To increase the effectiveness of the telescope, one must spend more money on the telescope to make up for the deficiencies of the site. In fact there are certain deficiencies of a site that cannot be corrected by anything you can do in design of the telescope.

Mr. OSTERTAG. Is it a matter of elevation or climate or what?

Dr. BERKNER. A telescope has a forward beam and then inescapably has certain side beams or lobes. Energy is received through these side lobes which one cannot avoid. If the level of noise is too high the energy received by what we call the side lobes or the back lobes is sufficient to destroy the effectiveness of pickup of the front lobe itself when pointed to very weak radio sources in the sky.

Therefore, it is necessary to keep the noise levels very, very low to avoid the interference of signals from either the side lobes or back lobes.

The relative effectiveness of this site can be measured, in a way, by comparing the total number of signals you can hear by the signal intensity. This has been done; I will give you the numbers. In Washington this figure of merit would be about a million. At the very next best site it would be about 10 times as high as the site we have selected. The number for the site we have selected is less than a thousand. So that there is a ratio, for example, between a telescope in Washington and a telescope on this site of much more than a thousand.

Mr. JONAS. How far is Green Bank from Washington?

Dr. BERKNER. 214 miles.

Mr. JONAS. How far from Charleston, W. Va.?

Dr. BERKNER. 150 miles.

Mr. JONAS. Are those the nearest cities?

Dr. BERKNER. Elkins, W. Va., is 54 miles, White Sulphur Springs 60 miles, Hot Springs, Va., is 54 miles.

Mr. JONAS. Where was the location in southwest Virginia that you say would have cost $20 million to build?

Dr. BERKNER. I say to get the equivalent it would have cost very much more money.

Mr. JONAS. Why?

Dr. BERKNER. Because the noise levels were higher.

Mr. JONAS. Where was the location in southwest Virginia?

Dr. BERKNER. There were several locations in southwest Virginia.

Mr. JONAS. Where did those noise levels come from?

Dr. BERKNER. The mountain protection around the other sites was not as good as around the present site by a factor of 10 over the next best site.

Mr. OSTERTAG. The mountains provide protection.

Dr. BERKNER. Yes, sir. This present site is a very peculiar site, with a ring of 5 mountains around it extending up to about 4,500 feet. The valley bottom has an altitude of only 2,700 feet. The effect of the tropospheric scattering of radio waves is to build up the intensity outside of this natural bowl and radically reduce the intensity within the bowl itself so there is an extremely low field intensity at this site.

Mr. YATES. Did you also investigate the West as a possible location?

Dr. BERKNER. We did not investigate the West thoroughly, although it would be very difficult to find a site as good as this in the West because of the lack of successively ringed mountains around the site.

Mr. THOMAS. Mr. Chairman, before you leave the question of the land, perhaps the doctor could strengthen his case; $240, leaving the record in that shape, for ordinary land, is considerably out of line. Maybe you had to buy some farmhouses or improvements on the land. What improvements did you have to buy?

Mr. YATES. $240 an acre seems reasonable to me. In Illinois, land sells for $500 to $1,000 an acre. When he testified this is bottom land in a valley and is used for farming, I thought it was reasonable.

Dr. BERKNER. There are certain improvements on the site, including farmhouses and barns, but most of these were pretty old.

Mr. THOMAS. Was this all in cultivation?

Dr. BERKNER. No. Most was used for grazing.

Mr. THOMAS. How far from any towns of 10,000 population?

Dr. BERKNER. There is only 1 town, of 1,500 population, Marlinton, 30 miles away. The next town is Elkins, 52 miles away.

Mr. THOMAS. Perhaps they would like to sell the whole county at about half that price.

Dr. BERKNER. I believe this is the going price for this land. We felt we got a very good price. I believe the Corps of Engineers agreed.

Mr. BOLAND. I presume the Corps of Engineers had their experts in it.

Mr. YATES. They are fairly experienced.

Mr. JONAS. I am right now in hearings on military construction, and the armed services are seeking to acquire land that costs thousands per acre.

Mr. YATES. Where is it?

Mr. JONAS. Adjacent to some airstrips.

Mr. LUTON. Could I say a word on the land acquisition?

Mr. YATES. Yes.

Mr. LUTON. The cost has run about an average of $183 per acre. Options were taken in the beginning, before the Government was involved in this, before the people there were given that information. AUI had a lawyer there take options on quite a large number of acres of land, more than has been purchased since then. On these pieces that we finally purchased, his options ran $472,000 for the land. The actual purchase price that we estimate when we get through will

be $486,000, which is very close to the original options that were taken. At the time they were taken, nobody knew that the Government was the party that would be interested in the purchase of the land.

Mr. THOMAS. There is quite a discrepancy in those figures.

Mr. LUTON. The difference between $472,000 and $486,000.

Mr. THOMAS. I thought it was——

Mr. LUTON. That $650,000 includes the acquisition cost of the Army engineers, the administrative cost.

Mr. YATES. $200,000?

Mr. THOMAS. Why should the administrative cost zoom from $165 to $170 an acre to around $240 an acre?

Dr. BERKNER. The land is in a very large number of small pieces because it has been inherited and split up and there were large survey costs in the whole area. A very detailed survey had to be made and the title searches were very involved.

Mr. LUTON. In the $650,000 estimate we had $80,000 in there for easements which we expected to take on other land surrounding the facility so they could control the noise level. The acquisition cost for the Army engineers only amounts to $83,000 for the entire project. The difference between the figures I gave you and the $650,000 estimate does not represent entirely——

Mr. THOMAS. You better lay it all out on the table where we can see it. We know real-estate values. If you tell the whole tale, it is different.

Mr. LUTON. I can give an itemization of this $650,000, if you like.

Mr. THOMAS. That would be helpful.

Mr. YATES. On the basis of what you told us so far, the administrative costs are about 50 percent.

Mr. LUTON. $83,000 for the Army engineers and the cost of acquisition will be $486,000.

Mr. YATES. The cost you have here is site acquisition, $650,000.

Dr. BERKNER. Easements are $80,000.

Mr. THOMAS. $90,000 for easements. You do not get title with easements. You get rights.

Mr. LUTON. Right. The easements have not been taken yet.

Mr. JONAS. How did you locate this site that is superior to any other in the United States? Was it just by accident?

Dr. BERKNER. The entire eastern mountain area was surveyed, first of all, with the Corps of Engineers, the Geological Survey; the whole details of the map were studied; 30 sites out of the entire area were selected as potential sites for detailed study.

Mr. JONAS. From the map?

Dr. BERKNER. From the detailed geological contour maps.

Mr. JONAS. Were you looking for sites along the Atlantic seaboard?

Dr. BERKNER. We were looking for sites somewhere in the east where it would be accessible.

Mr. JONAS. If you wanted mountain protection, naturally you looked along the Blue Ridge.

Dr. BERKNER. Exactly.

Mr. JONAS. It was not sold to you by some outsider but you discovered it.

Dr. BERKNER. No, sir, it was not sold to us by any outsider. Furthermore, each step was reviewed by the Radio Astronomy Advisory Committee.

Mr. YATES. So far the figures show the actual cost for the purchase of land was $486,000. You will furnish the committee with the actual breakdown.

Dr. BERKNER. Yes, sir.

(The information referred to follows:)

The site for the National Radio Astronomy Observatory will total approximately 2,700 acres when all the land has been acquired. Of this total acreage, 2,141 acres have been purchased; 516 acres are now in process of condemnation, and a few small parcels of land are still to be purchased. The total estimated cost of the land acquisition is $650,000, broken down as follows:

Land already purchased or in process of condemnation (2,657 acres)	$486,863
Restrictive covenants on land surrounding site and purchase of selected small parcels of land to assure protection from local electrical disturbance	80,000
Cost to Army engineers of acquiring land	83,137
Total cost for 2,701 acres	650,000

The cost of land purchased to date has averaged about $183 per acre (including improvements). The $80,000 estimated for restrictive covenants on land surrounding the site and for purchase of additional land is being held in reserve until the purchase of all other land is completed. The restrictive covenants are necessary in order to assure that land surrounding the site is not used for purposes that will create electrical disturbances, thereby interfering with the operation of the radio telescopes. The additional land to be purchased consists of small parcels of land that are located across the road from the Observatory. Development of this land for commercial purposes could seriously interfere with the operation of the telescopes. It was initially planned to secure restrictive covenants on this land, but it now appears to be more appropriate to purchase outright the small acreage involved.

BUILDINGS AND HOUSING

Mr. YATES. Buildings and housing. Put pages 17, 19, 21, and 22 in the record at this point.

B. BUILDINGS AND HOUSING

ADDITIONAL FUNDS REQUESTED, $586,000

The cost estimates for the construction of the required buildings on the site were developed by Irving Bowman & Associates, an architect-engineering firm of Charleston, W. Va. Cost of the buildings includes such items as driveways, landscaping, parking areas and other paving, and general cleanup. Also included in the cost is architectural engineering services covering the cost of preliminary design; preparation of detailed specifications and drawings for the invitation of bids; review of bids and preparation of contracts; preparation of working drawings and additional detail as required during construction and inspection for compliance during construction.

The additional funds are required for construction of a maintenance building, for renovation of farm buildings presently on the site, for additional costs of the laboratory and administration building, and for construction of a residence hall and cafeteria.

Total estimated cost of buildings and housing

1. Control building (85-foot telescope)	$37,000
2. Maintenance building	162,000
3. Laboratory and administration building	461,000
4. Renovation of on-site houses and buildings	68,000
5. Residence hall and cafeteria	454,000
Total	1,182,000

1. Control building (85-foot telescope)

The control building for the 85-foot telescope will provide space for receiver components, control panels, and other electronic devices utilized in research with the 85-foot instrument. As shown by the drawing on the following page, the building is of simple design, providing about 1,100 square feet of space. The only unusual construction requirement is the need for temperature and humidity control to assure adequate performance of the highly sensitive electronic equipment. A contract has been let for construction of the control building with a completion date of June 1, 1958.

Total cost of the control building will be $37,000, including cost of construction as well as costs of design. Although this amount is greater than the estimate for this purpose reflected in the fiscal year 1958 budget, the increase is offset by the elimination of a separate diesel-generator building (as the standby generation will be located in the maintenance building).

2. Maintenance building

The present estimated cost of the maintenance building ($162,000) is $90,000 greater than the amount of the estimate reflected in the fiscal year 1958 budget. The earlier estimate was based on the assumption that a large temporary building would be required by the contractor in the fabrication and erection of the 140-foot telescope, and could be modified to serve as a permanent maintenance building following termination of construction. This assumption has proven to be in error as the contractor's building must be located close enough to the telescope foundation to permit a crane to swing the heavy girders and large fabricated parts into position without transporting them after assembly. The requirement for proximity to the telescope and a removable roof to permit the crane operation has resulted in decision by the proposed contractor to provide a large tent for construction purposes, thereby eliminating the possibility of a temporary building becoming available for permanent use.

As the site is located in a remote rural area without ready access to highly skilled technicians or to shop facilities for repair, it is essential to the successful operation of the observatory that it be almost entirely self-suffcient insofar as maintenance and repairs are concerned. As shown by the drawing on the succeeding page the estimate provides for a building utilizing prefabricated construction, having total space of approximately 10,700 square feet, which will make provision for a heavy machine repair shop; carpentry, machine, sheet metal, welding and paint shops; receiving, storage, and stock room space for the observatory; space for the shop foreman and grounds superintendent; a motor vehicle repair shop; and the main distribution center and switch gear for the electric power system as well as a diesel generator required to provide emergency electrical service. Two overhead monorail cranes—a 1-ton and a 2-ton—will be provided for handling the heavy parts and equipment of the telescope. In addition to the repair and maintenance requirements of a facility of this size the shops will be required in the development and fabrication of research equipment necessary to assure maximum utilization of the telescopes as the research program leads to further expansion of our knowledge in the field of radio astronomy.

Work involved in preventive maintenance and repair of the 140-foot radio telescope, which has a weight mass equivalent to that of a modern destroyer and is completely exposed to the elements, together with supervision and care of the 2,700 acres comprising the site; the repair and maintenance required for the 9 houses and buildings presently on the site and 45,500 square feet of space in buildings to be constructed; the need for maintaining the observatory's own standby power system, and water and sewer systems creates a continuing maintenance requirement of major magnitude.

3. Laboratory and administration building

The laboratory and administration building is a 2-story structure with a total square footage of 18,800, designed to provide office and laboratory space for the permanent staff and for visiting scientists. In addition, approximately one-half of the building area will be excavated to provide space for the boiler-room, switch gear and for mechanical equipment storage. The final architectural engineering plans indicate that it will be possible to construct the building for $461,000, or $20,000 more than the estimate reflected for this purpose in the fiscal year 1958 budget.

The following table provides a breakdown of the usage of the 9,400 total square feet of space on the first floor:

Space usage	*Number of square feet*
Director's office	373
Deputy Director's office	373
Space for secretaries for Director and Deputy Director	256
Business manager's office	336
Accounting office	252
Duplicating room	420
Dark room	168
Six private offices of 252 square feet each for scientists and other permanent staff members	1,512
Conference room	420
Stock room	252
Storage space	260
Electronics repair shop	840
Laboratory space	572
Toilets	441
Lobby, halls, stairways, etc	2,825
Total first floor space	9,400

Provision must be made for laboratory and instrument shops, to provide facilities for testing and development of new and modified electronic and auxiliary equipment, procedures and techniques as well as for maintenance and repairs. The long-range usefulness of the facility is dependent in part upon having facilities available that will permit performance of research on basic instrumentation for radio astronomy.

The second floor will be utilized primarily to provide office and laboratory space for visiting scientists; space for the library and research records and for processing of research data. The 9,400 square feet comprising the second floor will be utilized as indicated below:

Space usage	*Number of square feet*
9 offices of 252 square feet each for visiting scientists or staff personnel	2,268
Library and observatory research records	840
Data processing	588
Laboratory space	1,428
Conference room	840
Lounge	420
Toilet and locker space	609
Storage	260
Halls, stairways, etc	2,147
Total second floor space	9,400

The second floor provides laboratory space in addition to space on the first floor where receiver and electronic equipment design, development, engineering and testing can be performed. Work on transmitter development and vacuum tube techniques are typical of the research that will be carried on by staff and visiting personnel in addition to the observation program, if reasonable progress in the virtually new field of radio astronomy is to be assured. Equipment for these areas is discussed under section D. Space is also provided for a library necessary for the scientific and reference needs of the observatory, together with space for research record storage, space for data processing equipment used to reduce data to punched cards or tapes for analysis by electronic computer methods, storage space, offices for visiting scientists and scientific staff, and a conference room for holding of formal and informal meetings and discussions between scientific personnel, together with a small lounge space.

CONTROL BUILDING

Mr. YATES. What is the cost per square foot of the buildings that are contemplated? You have the first building, the control building

for the telescope. The justification says this requires a particular type of construction because of the need for air conditioning for control panels and other electronic devices. This would add to the cost.

Dr. BERKNER. Yes, sir.

Mr. YATES. Who prepared the cost estimates on this?

Dr. BERKNER. This building has actually been built.

Mr. YATES. It has been built already?

Dr. BERKNER. Yes.

Mr. YATES. This is actual cost?

Dr. BERKNER. It is a little under $37,000.

MAINTENANCE BUILDING

Mr. YATES. What about the maintenance building? Has that been built yet?

Dr. BERKNER. That is being put out for contract now. That maintenance building we expect will be about $10.35 a square foot.

LABORATORY

Mr. YATES. What about the laboratory and the administration building?

Dr. BERKNER. Those have not gone out for bids yet. The laboratory building will have to have special features and we anticipate that will run probably around $24 a square foot.

RENOVATION OF THE ON-SITE HOUSES

Mr. YATES. What about the renovation of the on-site houses and buildings for $68,000? We will insert pages 26, 27 and 28 in the record at this point.

4. Renovation of existing housing and buildings on the site

There are at present eight houses with barns and outbuildings on the site. All of them are of frame structure ranging in age from 75 to 150 years. It is necessary to renovate these houses and one of the barns to serve as temporary office, storage and work space during the construction of the observatory and to provide living quarters for visiting scientists and for staff personnel after the observatory is completed. The amount required for these purposes is $68,000, compared with the initial estimate of $25,000 which was based upon preliminary examination as to condition, and contemplated renovation of 8 houses.

There are no houses for sale or rent in the area and there has been no local interest displayed in providing for construction of homes for sale or rent. The nearest towns with hotels or other living accommodations are approximately 30 miles away. It is therefore necessary for the observatory to provide living quarters for visiting scientists and for key staff members until they can succeed in establishing their own homes. This requirement is particularly critical for such positions as the highly skilled electronic technicians that will be required. Such personnel are customarily employed by industries located in metropolitan areas. While it is possible to attract such personnel to the observatory because of their preference to work on a research related program rather than industial projects they cannot be persuaded to accept employment unless there are facilities available for housing their families. The activation of a research program at the observatory in October 1958 when the 85-foot telescope becomes available requires the immediate recruitment of a central observatory staff. The table below indicates the cost of renovating and planned use of the 8 houses and 1 large barn. The houses are small farm homes, generally without plumbing or central heat. Renovation is limited to providing adeqaute sanitation and heat-

ing arrangements and making the houses structurally sound. Costs of renovation are detailed below:

Structure	Number of rooms	Intended use	Estimated cost of renovation
House	6	Office space only	$8,000
Do	6	Laboratory and office	10,000
Do	6	Residence, visiting scientists	5,500
Do	5	Temporary residence, staff assistants	6,000
Do	6	Temporary residence, construction manager	8,000
Do	8	Temporary apartments, visiting scientists	10,000
Do	8	Guest house, single visiting scientist	8,000
Do	7	Temporary laboratory and shop	5,000
Barn		Maintenance	2,500
		Contingencies	5,000
Total			68,000

5. Residence hall and cafeteria

Construction of the residence hall and cafeteria was not provided for in estimates reflected in the fiscal year 1958 budget. At that time it was assumed that living quarters would not be required to be furnished by the observatory and that a cafeteria could be established on a temporary basis at least in an existing building.

The isolation of the site requires that quarters be made available for visiting astronomers, and that quarters be made available for staff members until they can establish their own homes and that eating facilities be provided. The nearest communities—Arbovale and Green Bank, W. Va.—are both under 250 in population. There are no hotels, restaurants, or tourist courts in the immediate area. The present staff, with one exception, is quartered in a hunting lodge of rather primitive construction located several miles from the site. Elkins, W. Va., the nearest town of 10,000 population, is 50 miles distant over mountain roads.

Estimates based upon architectural design and specifications indicate the required building could be constructed for $454,000. The residence hall as shown in the drawings on the two pages following this section, which have been revised to reflect changes as a result of review, is a two-story building including approximately 16,000 gross square feet of space, of which 11,500 is for housing and 4,500 for cafeteria facilities. The first floor would provide space for the kitchen and dining area and for four small apartments. The apartments consist of one bedroom, living room, kitchen, bathroom and dinette space. The second floor provides for a lounge and 16 double rooms to be used as living quarters. It is anticipated that there will be a minimum of 14 visiting astronomers in residence at the observatory as soon as the research program gets underway, and that the number will increase substantially in succeeding years. The residence hall will be utilized to provide living quarters for visiting astronomers and for staff personnel until they can secure their own living accommodations.

Present plans call for operation of the cafeteria on a concession basis. Suitable rental schedules for the residence hall as well as the renovated housing, will be established and administered in accordance with provisions of Bureau of the Budget Circular A–45 covering rental of living quarters.

The distribution of space by major components is indicated as follows:

Space usage

	Number of square feet
1st floor:	
4 apartments at 1,008 square feet each (living space, 756; porch, 252)	4,032
Lobby, entryways, stairways, etc	1,728
Kitchen and related space	2,164
Cafeteria	1,672
Corridors, etc	630
Subtotal	10,226
2d floor:	
16 rooms at 280 square feet each	4,480
Corridors, stairways, lounge, etc	1,280
Subtotal	5,760
Total square feet	15,986

Dr. BERKNER. That is essentially completed.

Mr. YATES. And is approximately actual cost?

Dr. BERKNER. Yes, sir.

Mr. YATES. Do you have the actual cost figure?

Dr. BERKNER. I do not believe the final bills are in but it is very near completion.

RESIDENCE HALL AND CAFETERIA

Mr. YATES. What about the residence hall and cafeteria?

Dr. BERKNER. That is a new item brought about by the speed up at which we can get the telescope. It is essential to find places for people to live. The nearest place that we have for our engineers and scientists to live at the present time is 28 miles from the site at Minnehaha Springs, where we have rented a lodge. This is impossible.

Mr. YATES. Who is using the renovated houses?

Dr. BERKNER. As rapidly as the houses are renovated we are bringing staff in to use the houses temporarily until they can find permanent sites. They are being used by visitors and particularly by construction personnel. There is no other place to live. Also, several of the renovated houses are being temporarily used as laboratories and construction centers. There are 9 or 10 of them altogether that are capable of renovation. All are small.

Mr. SHEPPARD. These are scattered around the property.

Mr. YATES. Page 26 indicates that you have 8 houses and a barn scattered around the property.

Dr. BERKNER. That is right.

Mr. YATES. Have all of these been renovated?

Dr. BERKNER. Renovation is being completed at the present time. Some are already occupied.

Mr. YATES. Are they furnished?

Dr. BERKNER. We have to furnish some of them. Some are not furnished. I think only two are being furnished by us. The balance are being furnished by the people coming in. The buildings that are being used as laboratories are being furnished by the laboratory.

Mr. OSTERTAG. Does it cost $8,000 to renovate a 6-room house?

Dr. BERKNER. This particular house.

Mr. OSTERTAG. Why does it cost so much to renovate?

Dr. BERKNER. None of these houses had any facilities whatever. They did not have heat, I think one house had heat. The balance had to have heat put in. They have been previously heated with coal stoves. None had water. None had any modern sanitary facilities. In all but one case, new wells had to be drilled because there were only surface wells with unsatisfactory water available. The sewage outflow facilities, septic tanks had to be put in, and so forth.

Mr. OSTERTAG. Thank you.

Mr. YATES. The staff indicates that the cost for renovating the residence hall and cafeteria based upon the figures that appear on page 27 is approximately $28 a square foot. Is that about right?

Dr. BERKNER. It is not quite right because there is a basement not included in the square footage underneath for storage which would reduce the cost to perhaps $24.

Mr. THOMAS. How many people will it take care of?

Dr. BERKNER. I do not have those numbers with me.

Mr. LUTON. There are 16 single rooms and 4 apartments.

Mr. YATES. This is indicated on page 28 which indicates that there will be 4 apartments at 1,008 square feet each, living space, 756; porch, 252; lobby, entryways, stairways, et cetera, 1,728; kitchen and related space, 2,164; cafeteria, 1,672; corridors, et cetera, 630. The second floor will have 16 rooms at 280 square feet each, 4,480; corridors, stairways, lounge, et cetera, 1,280, for a total square footage of 15,986.

Mr. JONAS. Did you establish that is how much per square foot?

Mr. YATES. Approximately $28 per square foot.

Dr. BERKNER. It is about $24.

Mr. JONAS. According to my mathematics the cost per square foot of the laboratory and administration building is nearly $50—$49 a square foot.

Dr. BERKNER. This is square footage of useful area. The service areas on the lower basement floor, et cetera, are not included in the figure.

Mr. JONAS. Which are you referring to?

Dr. BERKNER. The residence building is two floors plus a basement. The building estimates run about $24 a square foot.

Mr. JONAS. $461,000 for 9,400 square feet.

Mr. YATES. What page is that?

Mr. JONAS. Page 21.

Dr. BERKNER. 18,800 square feet not including basement and service area.

Mr. JONAS. Where did you read that?

Mr. SHEPPARD. There are 5,000 square feet in the basement area?

Mr. YATES. This will be very livable space, will it not?

Dr. BERKNER. Yes, we want to use the residence space primarily for visitors, people moving in and out of the site on experimental work for periods of a few weeks to a few months.

Mr. THOMAS. Will it be occupied 6 months out of the year?

Dr. BERKNER. We think it will be occupied all the time. In fact, I think we will be crowded for space. It is our plan to move permanent staff off the site as rapidly as they can acquire or build off site.

Mr. YATES. Is this type of practice characteristic of scientific institutions where distinguished scientists are invited to conduct their

experiments and then are housed and fed during the course of the experiment?

Dr. WATERMAN. It is especially true of astronomy. Scientists from all over the country may come to do particular research.

Mr. YATES. Will their cost be paid while they are there?

Dr. BERKNER. This varies with the experiment he has to do, how the experiment fits into the plan of the Observatory.

Dr. WATERMAN. They pay reasonable expenses.

Mr. YATES. England has the 250-foot telescope. Does it house visiting scientists?

Dr. BERKNER. It does not, but it is located in a relatively populous area but because of this the effectiveness is reduced. This reduces the effectiveness of their telescope there greatly.

Dr. WATERMAN. It is near Manchester.

Mr. YATES. Where is there a similar practice?

Dr. BERKNER. At Brookhaven, where we operate the large accelerators. There are only two big ones in the country at the present time. Scientists from universities come to Brookhaven to have access to the large accelator to carry out certain experiments. About half of the total research work done at Brookhaven National Laboratory is done by visiting scientists. This has been steadily growing in proportion since the founding of the Laboratory.

Mr. YATES. You say the English one is in an area relatively accessible. Do the visiting scientists pay their costs there?

Dr. BERKNER. They have four fellowships they grant to visiting scientists. These costs are reimbursed to that scientist to the extent of the fellowship.

TELESCOPES

Mr. YATES. Telescopes. Pages 31, 32, 33, 34, and 35 will be inserted in the record at this point.

(The material follows:)

C. Radio Telescopes and Related Equipment

Additional funds requested, +$3,936,000

A total amount of $6,611,000 is presently estimated as necessary to construct and place in operation an 85-foot and a 140-foot radio telescope, together with research receivers and allied equipment. This amount represents an increase of $3,936,000 over the $2,675,000 reflected for this purpose in fiscal year 1958 estimates. When these telescopes are in full operation they will permit the carrying on of about 12 separate research programs at any one time, with about 60 percent of the research time available to radio astronomers from the colleges and universities. The balance of the research time will be for programs of permanent staff of the Observatory. The individual instruments and their availability for research use, if funds are provided, are discussed in the following pages.

Total estimated cost of radio telescopes and related equipment

1. 140-foot radio telescope and foundation:	
Fabrication and erection of telescope ($4,327,000) and foundation ($423,000)	$4, 750, 000
Preliminary design studies, construction, inspection, and testing	275, 000
Adaptation of foundation to control room and finish base of telescope	215, 000
Escalation and contingency	466, 000
Subtotal	5, 706, 000
2. 85-foot radio telescope and foundation	310, 000
3. Radio-frequency components and other electronic equipment	595, 000
Total	6, 611, 000

140-foot radio telescope and foundation, basis for supplemental estimate

The major reason is for revision of the anticipated cost of the 140-foot radio telescope itself from the $2,200,000 reflected in the fiscal year 1958 budget to the amount of $5,706,000 indicated above have been:

(*a*) Developments that permit this unique instrument to be constructed to closer tolerances than previously contemplated or held possible (surface tolerance to within one-fourth-inch of a true paraboloid, and pointing accuracy of 10 seconds of arc, compared with previous assumption that three-eighth-inch surface tolerance and 30 seconds of arc-pointing accuracy would be the maximum precision possible).

(*b*) Increase in anticipated transportation and labor costs due to the remote location of the site. Skilled labor for erection of the telescope cannot be secured from the rural area in which the site is located, and must be brought from considerable distances. In addition, all components of the telescope—from large structural members to machined parts—as well as heavy machinery required for its erection and placement must be transported by truck a distance of 12 miles from the nearest railhead (Durbin, W. Va.).

(*c*) General increases in construction and materials cost since development of the estimate nearly 3 years ago. As indicated in the introductory statements, costs of structural steel and aluminum alone have risen appreciably during the period, and average hourly construction wages have advanced steadily.

(*d*) The fact that the initial estimate was prepared, using experience with smaller telescopes, before the design of the instrument was fixed. The cost was developed using the customary engineering basis for heavy steel construction—the gross tonnage of steel involved. Because of the unique design of the instrument, the close tolerance involved, and the general inexperience of contractors with similar construction, this has proven to be an inadequate method of estimating.

The Associated Universities, Inc., the Foundation's contractor for the National Radio Astronomy Observatory, has received, reviewed, and negotiated the minimum acceptable bid for the fabrication and construction of the 140-foot radio telescope, its drives and control mechanism, and its foundation. The firm contract price established as a result of negotiation was $4,750,000. It is necessary that funds be made available to permit the work to begin at the earliest possible date so that further price increases in materials and labor do not add to the overall costs of the project, and so that the telescope may be available by 1960.

FABRICATION AND ERECTION OF THE 140-FOOT RADIO TELESCOPE AND ITS FOUNDATION

Importance of large instruments to research in radio astronomy.—The total amount of radiation that reaches the surface of the earth from a so-called bright radio source in the sky is of the order of 1 watt. Thus, by the standards of communication engineers, radio astronomers have, essentially, no signal with which to work. Furthermore, this signal is not characterized by easily identifiable features, such as voice modulation, but is, generally, a constant hiss or noise, and can be distinguished from radio interference caused by manmade devices on the earth only because the celestial signals come from particular places in the sky.

Radio-astronomy telescopes must, therefore, have directional capabilities so that they may secure the maximum signal by pointing at a signal source. Be-

cause the radio wavelengths are so large, compared with the minute apertures of the radio telescope, the resolution is very poor. For example, a 60-foot telescope operating at the hydrogen-line frequency of 21 centimeters could not distinguish between a single moon or a cluster of 3 moons in the sky. A solution to this technical difficulty is, obviously, to make the apertures of radio telescopes very large. Such telescopes must be steered with great precision in spite of the great forces of wind, rain, and heat to which they are exposed. Moreover, at a given wavelength, the larger the telescope, the greater must be its precision of pointing. In the operation of the 250-foot British telescope at Jodrell Bank, a paraboloid more than an acre in area must be swung across the sky and pointed with accuracy of about 1 minute of arc. Thus, large radio telescopes are expensive precision instruments.

Description of the proposed instrument.—The proposed 140-foot dish will stand on a concrete foundation approximately 42 feet in height (the equivalent of a 3-story building). The total height of the foundation and the telescope is over 200 feet or higher than buildings may be constructed under the District of Columbia Building Code. The total moving mass of the dish, which will rest on specially designed polar bearings, will be more than 2,000 tons—or a weight equivalent to that of a Navy destroyer.

The reflector surface will be made up of 72 panels supported on a structural frame in a manner so that the panels may fit together to form a smooth continuous surface which will fit the prescribed tolerances.

The reflector surface and supporting structure will be fabricated of aluminum. Insofar as is known this will be the largest single aluminum fabrication job since the superstructure was completed for the liner *United States.*

Motion of the reflector will be about two axes: the declination axis will permit motion corresponding to a change of latitude on the earth; and the polar axis (parallel to the axis of the earth) will permit motion corresponding to a change of longitude on the earth. Rotation about the polar axis at the same rate but in the opposite direction of the earth's rotation permits the telescope to point continuously at (or track) a star or other celestial object. In the absence of gusty winds it is expected that the telescope may be pointed with a precision of 10 seconds of arc. An angle of 10 seconds of arc is subtended by 1 inch at a distance of 600 yards (or the thickness of two sheets of typewriter paper at a distance of 18 feet). The drive gear for the declination motion has a 35-foot radius and the polar axis gear has a 42-foot radius. These are not the largest gears ever built but the combination of size and precision required make them unique.

Precision of the telescope will be maintained with winds up to 16 miles per hour and through all weather conditions. In the event of winds more than 60 miles per hour, the instrument will be held in place by specially designed brakes.

In order that the 2,000-ton mass of the dish may move smoothly at very slow rates the polar bearings will be of an oil-pad type such as those used in the 200-inch Palomar telescope. There are two sets of bearings on the polar shaft. The bearing at the north end of the shaft is essentially a ball-and-socket arrangement with the ball having a diameter of 22 feet. This bearing must be ground to a precision of five-thousandths of an inch, and so delicately balanced that in the absence of an opposing wind a man might be able to move the telescope about the polar shaft.

As the proposed telescope will be of a precision not yet obtainable in any other instrument, it will permit American scientists to penetrate with accuracy to points in space that cannot be reached with any other instrument known to be in existence or under construction, and in terms of permitting American radio astronomers to advance our knowledge of outer space and its characteristics, will provide an extremely valuable research instrument for many years to come.

Drawings of the 140-foot instrument and its foundation are included on the following pages.

Fabrication and erection of telescope and foundation.—Proposals for bids were solicited from about 100 companies, of which about 40 responded. Nine responses were for the prime contract. The estimate submitted by these 9 respondents ranged up to $12 million. Further review and very careful analysis of these proposals narrowed the number of competent bidders whose proposals conformed to the specifications to a total of four. Estimates submitted by these 4 final bidders ranged from $5.6 million to $8.5 million. It was then decided to negotiate with each bidder and to point out in particular that the price named in their proposals was considerably in excess of the funds available. The estimates of each bidder were broken down into separate components and reviewed in detail to determine where savings could be effected and whether portions of the work could be deferred or elminiated without serious impact upon the completed instrument. As a result of these negotiations, estimates from the 4 bidders were pared down to a range of $4,750,000 to $6,300,000. The E. W. Bliss Co., of Canton, Ohio, was, as a result of such negotiations, the lowest bidder. The proposal for $4,750,000 includes detailed engineering, construction of the hollow concrete base, and fabrication and erection of the supporting structure, the dish, the counterweights, drives, and bearings.

In addition to the low bid, the Bliss proposal is also considered to be most attractive in that the company will be able to perform most of the work without extensive subcontracting. The bulk of the work will be done by Bliss in its own plant and in the field with only the construction of the fundation, the physical erection of the instrument on the site, and the design and manufacture of drive and control mechanisms being handled by subcontract. The Bliss negotiated bid would have contained no escalation factor if it could have been accepted when proffered. Since funds were not available for completion of the telescope however, a contract could not be signed with the E. W. Bliss Co. and provision for escalation has, therefore, become necessary as part of the firm bid received from Bliss. At the present time Associated Universities, Inc., has authorized Bliss to go ahead with detailed engineering drawings with the understanding that a contract will be signed for the fabrication, construction, and erection of the telescope when funds are available. The accepted contract price referred to previously is subject to escalation based upon the Bureau of Labor Statistics index of labor and material costs from December 1, 1957, to the start of the work.

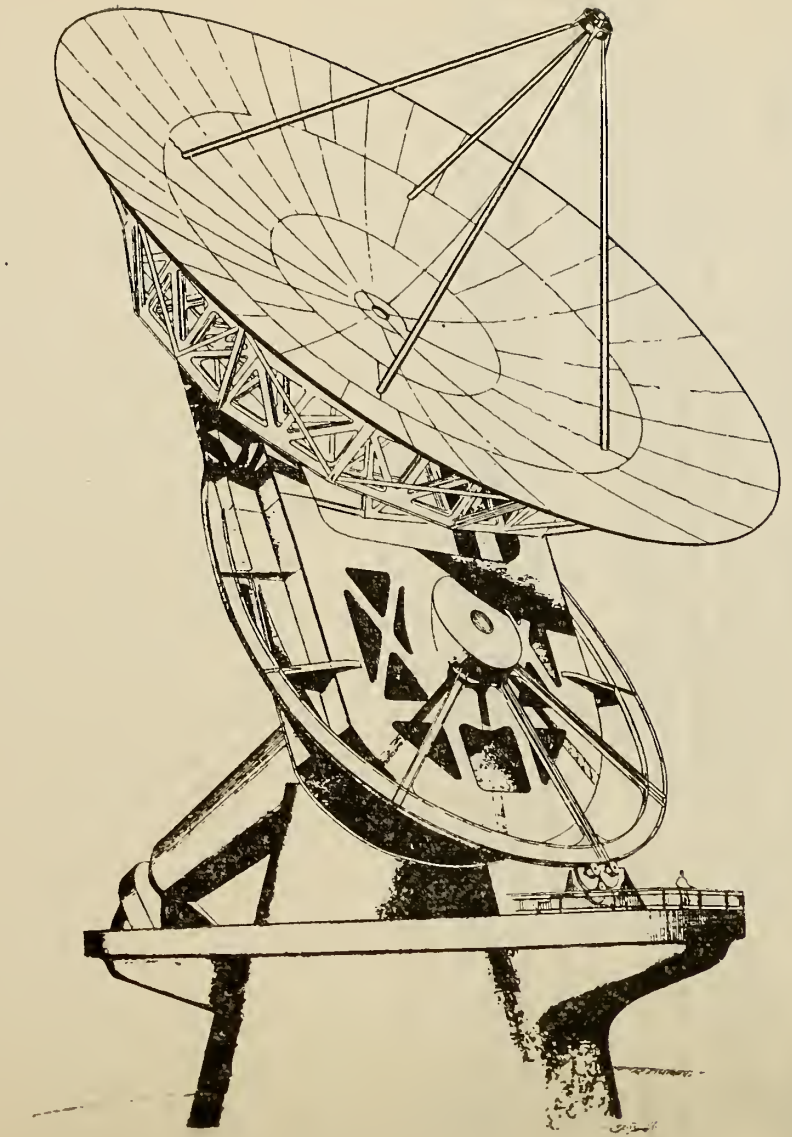
Mr. YATES. How did you happen to pick the E. W. Bliss Co. for construction?

Dr. BERKNER. The original specifications were sent to a very large list of companies for bids and the Bliss Co. was the lowest bid for the complete telescope. We therefore negotiated the contract with Bliss.

Mr. YATES. Has it constructed equipment of this type before?

Dr. BERKNER. It is one of the few companies in the whole country that is capable of constructing this type of equipment. It builds big presses and similar equipment which are very similar to the yokes used in the telescope itself.

Mr. YATES. We will insert page 36 in the record at this point so we may get a graphic picture of the proposed telescope and its location in the State of West Virginia.



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THE GREENBANK OBSERVATORY
140 FOOT RADIO TELESCOPE ON EQUATORIAL MOUNT
FOR
ASSOCIATED UNIVERSITIES, INC.
NEW YORK CITY, N.Y.

COVER SHEET

NED L. ASHTON
CONSULTING ENGINEER
IOWA CITY, IOWA

SHEET No. A

USES OF TELESCOPE

Mr. JONAS. Give a brief description of the uses the telescope will be put to.

Dr. BERKNER. The telescope will be used for many experiments by many different groups. For example, there are two astronomers at Yale at the present time planning experiments to go into the telescopes at Green Bank. At the University of Michigan plans are being made by Professor Goldberg and Professor Haddock. Certain experiments will be done in this telescope by the scientists from the Naval Research Laboratory. The University of Virginia is just now planning some changes in its astronomy department as a result of retirements which will permit its active participation in the work of the telescope.

Mr. JONAS. Do you visualize students from schools of astronomy will spend time here?

Dr. BERKNER. Yes, sir. I do. Our experience at Brookhaven has been that a considerable number of graduate students come to these special laboratories to acquire access to facilities that would not otherwise be available for their thesis work.

Mr. JONAS. Not necessarily restricted to the holders of your fellowships?

Dr. BERKNER. No. We have participation at Brookhaven by, I believe at last count, 102 colleges, universities, and institutions in the activities.

Mr. JONAS. Who will control the selection of the individuals who may use it?

Dr. BERKNER. The Director of the Laboratory has to be the final man to make the decision because he not only has to select the experiments in terms of the importance of the experiments but also the priority with which they go into the telescope. His work will be reviewed by the National Radio-Astronomy Advisory Committee.

Mr. JONAS. How many people do you think will work there at one time?

Dr. BERKNER. We anticipate the maximum number of astronomers at any one time in the present facility would be about 20.

Mr. YATES. Will you learn something different or something better or will this telescope serve a better purpose than the observatory at Mount Palomar where you have your visual telescopes? I read in your other justification that this telescope will permit you to go further out into the universe than visual telescopes.

Dr. BERKNER. We think it will with respect to certain phenomena in the universe that radiates on radio frequencies. Certainly we believe that some very important advances in the field of astronomy can be made. First of all, of course this telescope can be used for study of certain aspects of the solar system itself. Secondly, it will be used to study galactic phenomena, to further certain mapping techniques using the hydrogen line to determine the location of hydrogen in the universe. But especially this telescope will be useful for intergalactic work, the extension of our knowledge of the universe as a whole. Radio-astronomy is particularly useful in studying phenomena of star building and star destruction everywhere in the university; it can be examined more carefully than at the present time using only optical techniques.

I might add, Mr. Chairman, there are certain conflicting theories at the present time of how the universe is formed and destroyed. It is hoped that this telescope can contribute substantially to deciding between those theories.

Dr. WATERMAN. One of the immediate assets is the ability to see through to the other side of our galaxy, the Milky Way.

Mr. JONAS. Are you sure telescopes of this character are not being outmoded and outdated by our exploration in outer space? We are not putting our money on a horse-and-buggy proposition, are we?

Dr. BERKNER. Your question is pertinent. The answer is, a good deal of astronomy will move out into space as we develop a means of getting into space. There is absolutely no question about it.

Mr. JONAS. I understand it will not be long before we will be photographing outer space from planes.

Dr. BERKNER. That is corrrect but, on the other hand, there are telescope measurements now being made from balloons and certainly will be made in the near future from satellites in space activities, but this will not duplicate the work planned for this telescope. This telescope can do certain work more efficiently from the surface of the earth than you could possibly do it from space. On the other hand, when we can get into space we would like to work in new frequency ranges that are quite impossible on the surface of the earth.

Mr. YATES. Can a telescope of this type help Dr. Wexler in his work?

Dr. WEXLER. It has revealed some wind levels.

Mr. YATES. I wonder whether you would be able to help the weather people.

Dr. BERKNER. One will learn something about the movements in the outer atmosphere as a consequence of scintillations produced in the telescope itself. Such studies conceivably could have reaction on the weather. We do not know how.

Mr. JONAS. You think there will be a continuing need for telescopes of this sort?

Dr. BERKNER. Yes, sir.

JUSTIFICATION MATERIAL

Mr. YATES. Put pages 39, 40, and 41 in the record.

In addition, Bliss' present union contract calls for a wage increase in September 1958, and their proposal is based on the assumption that most of the shop work can be completed before this increase becomes effective.

The E. W. Bliss estimate as negotiated includes construction of the foundation of steel reinforced concrete at a cost of $423,000, and the fabrication, construction and erection of the telescope at a cost of $4,327,000. Specifications for the 140-foot telescope foundation provide for a basement and two-story structure that will not only support the weight of the telescope but will serve as the control building and provide space for the radio receiver panels controls, electronic and other related equipment. The foundation is approximately 52 feet square at the base with 3-foot thick walls tapering upward to approximately 39 feet square immediately under the deck surface surrounding the telescope. The deck surface alone is approximately 95 by 40 feet. The total overall height from the basemet floor to the floor of the deck will be approximately 56 feet. The cost of the foundation shell only is included in the Bliss bid. Finishing of the interior and adaptation of the basement and the other two floors to serve as the control building for the telescope are not included in the contract.

Preliminary design studies, construction, inspection, and testing.—It is estimated that a total of $275,000 will be required to provide for the preliminary design of the telescope and for inspection and testing during construction. To date a total of $51,134 of this amount has been expended by Associated Universities, Inc., for partial payment of costs of preliminary designs and drawings by Dr. Ned Ashton, consulting engineering, of the University of Iowa; costs of design of the intricate drive and control mechanisms; wind tunnel tests of the structure model; and design by the Franklin Institute of Philadelphia of the oil-pad bearing system by which the telescope is supported at the polar axis. Total costs of such services will be $200,000.

An amount of $75,000 is estimated to be required for independent inspection and testing during construction of the foundation and the instrument. The Pittsburgh Testing Laboratory, or a similar laboratory, will make continuing tests on contractor performance involving adherence to specifications for concrete, steel, and aluminum components, as well as metallurgical and X-ray tests of ability of structural members to withstand the stresses contemplated.

Adaptation of foundation as a control room.—As stated previously, the foundation for the telescope to be built by E. W. Bliss will provide the equivalent of three stories including the basement. The interior finishing of this structure to permit use as a control building for the telescope is not included under the Bliss contract. It is estimated that an additional $215,000 will be required for this purpose. The basement will provide space for a transformer vault and for other mechanical equipment including a water pump and tank. Access to the foundation will be available at the basement level with an elevator and stairs running from the basement to the open deck. The first floor will serve as the main control room and will house radio receiver components and two banks of recording clocks. The second floor will house the switch gear and air conditioning equipment as well as providing work space immediately adjacent to the instrument. The estimate provides for the costs of interior design as well as for the construction of the necessary partitions, stairways, electrical wiring, plumbing, painting, installation of flooring, air conditioning necessary for effective performance of electronic components, and the installation of the elevator. Other costs include paving of the area immediately surrounding the telescope and providing for storm drainage connections to carry off the tremendous volume of water collected by the dish and for installing an aluminum railing around the top deck.

Escalation and contingencies.—In accordance with sound principles of construction estimating, an amount is included to cover possible costs for escalation that may occur between December 1, 1957, and the signing of the contract, as explained earlier, or unforeseen contingencies which may develop in connection with the completion of this unique construction project. The amount represents approximately 10 percent of the estimated cost of the 140-foot telescope, its foundation and immediate equipment related thereto.

A further consideration in proposing a separate amount for contingencies and escalation is the possibility that scientifically desirable technical modifications in the telescope or its mechanisms can be effected. For example, at the time the design was established it was not deemed necessary for the telescope to have a drive control mechanism that would permit it to sweep rather quickly from horizon to horizon. The successful launching of earth satellites since that time makes it desirable to consider adaptation of drive and control mechanisms to permit rapid movement for tracking of fast-moving objects and the recording of telescope position by automatic data devices. Since the radiotelescope is not only an effective research instrument, but will be equally effective as a device for tracking objects such as a satellite, it may be desirable to incorporate this change in design, particularly since this instrument represents a unique design that has never before been attempted in this country. With a consequent lack of precise information from experience it is highly desirable that sufficient funds be available to permit work to go forward in the event that it is desirable to effect changes in specifications that might serve to increase the cost of the instrument.

OTHER OBSERVATORY EQUIPMENT

Mr. YATES. Pages 49, 50, and 51 deal with "Other observatory equipment." We will put them in the record.

27544—58——51

Other observatory equipment.—Additional funds requested, +$45,000.

Total estimated cost of other observatory equipment

1. Shop and maintenance equipment	$78,000
2. Electronic test and repair equipment	100,000
3. Office furniture and equipment	40,000
4. Living quarters and cafeteria furniture and equipment	77,000
Total	295,000

The isolation and size of the site (2,700 acres), and the size and complexity of the 140-foot telescope requires that the facility be virtually self-sufficient insofar as repair and maintenance are concerned. The absence of housing and eating facilities in the area of the site requires that living quarters and a cafeteria be made available. Equipment needs have been computed in detail on the basis of General Services Administration furniture and equipment schedules where appropriate, and with reference to experience of other Federal agencies and retail outlets for other items. The net increase for this component is due to the need for purchasing equipment to furnish the cafeteria and residence hall.

1. *Shop and maintenance equipment.*—The amount of $78,000 required for this purpose is $22,000 less than the amount reflected in the fiscal year 1958 budget estimate, and provides machinery, apparatus, and tools necessary to perform preventive maintenance and repair of the radio telescopes—which are exposed to the elements—the buildings, the utilities, and the site. As mentioned earlier, the isolation of the site makes it desirable that self-sufficiency in terms of repair and maintenance be maintained, so that scientific research may proceed without the interruption that would occur if each repair required extensive travel or transportation to communities where facilities or trained personnel are obtainable. The maintenance building discussed earlier will include the following shops, for which equipment will be provided under this estimate: Machine shop, carpentry shop, metal shop, plumbing shop, and a paint shop. In addition, power equipment is contemplated for upkeep of at least the central portion of the 2,700-acre site. As a measure of the repair and maintenance job involved the observatory shops will be responsible for 9 renovated farm buildings; for 3 buildings to be constructed including 45,500 square feet of space; for sewer, water, and electrical systems of the facility; and for work on the highly complex 140-foot and 85-foot radio telescopes and necessary repairs to 1½ miles of road.

The shops indicated will not only be used for maintenance and repair of the site and its equipment (except electronic repairs, for which space is provided in the laboratory and administration building, and equipment funds included in the following section), but also for the machine, metal, and carpentry work involved in construction of models in connection with development of components for use in the telescopes as research in radio astronomy goes forward.

2. *Electronic test and repair equipment.*—The observatory will of necessity provide its own electronic equipment for mainentance and repairs of the sensitive and complex radio receivers and allied components employed on the two telescopes. Estimates provide for standard test and repair equipment not only to test the performance and detect sources of difficulty, but also precision instruments for use in the three experimental design laboratories located in the laboratory and administration building, that will be necessary for research on development of improved radio astronomy receivers and electronic components. It will also be necessary for the observatory to operate its own mobile test laboratory to locate electrical and radio interference in the area and assure that the "quietness" of the area is maintained. The amount of $100,000 currently estimated is greater than the $50,000 reflected for this purpose in the fiscal year 1958 estimates due to more realistic appraisal of requirements.

3. *Office equipment and furniture.*—The estimate for office furniture and equipment indicated in the fiscal year 1958 budget has been materially reduced as a result of pricing for standard office equipment and furniture in accordance with General Services Administration procurement schedules. The present estimate of $40,000 will provide for equipping the two-story laboratory and administration building described under section B3, and contemplates full-time staff employment of 71 and office accommodations for 14 visiting research scientists by June 30, 1960.

4. *Equipment and furniture for living quarters and cafeteria.*—This new item provides for furnishing and equipping the proposed residence-hall and cafeteria

described earlier, as well as an amount necessary to furnish three of the houses on the site to be renovated as residences for visiting astronomers. To the greatest possible degree current General Services Administration procurement schedules have been used for pricing of medium-price lines of furniture, and in the case of the kitchen and cafeteria, estimates of individuals and retail outlets experienced with procurement of such equipment have been considered, so that the amount of $77,000 represents a reasonable estimate for modest furnishing and equipment.

Mr. YATES. Why do you need such a big machine shop at this place?

Dr. BERKNER. As you know, all laboratories need big machine shops but we are handling very big equipment here.

Mr. YATES. That does not necessarily call for a big machine shop.

Dr. BERKNER. One of the important aspects of all radioastronomy work is changing of the feeds at the end, which have to be machined. The construction of equipment on the site needed to change the experimental techniques and so on will be carried out in the machine shop. Actually the machine shop is not very big.

Mr. YATES. Except in cost.

Dr. BERKNER. Not very big in cost.

Mr. YATES. As I remember it, it is a couple of hundred thousand dollars.

Dr. WATERMAN. $78,000 on shop and maintenance equipment.

Mr. YATES. Did I get that impression from the cost of the building?

Mr. SHEPPARD. That is total for machine shop and maintenance.

Mr. YATES. Are there any further questions? Dr. Berkner, thank you very much. The committee will be glad to consider your request.

Dr. BERKNER. Thank you, Mr. Chairman.

INTERNATIONAL GEOPHYSICAL YEAR

Mr. YATES. We move on to the IGY and you may put your other cap on. Who justifies this?

Dr. WATERMAN. Dr. Kaplan will do it in detail.

Mr. YATES. Let me summarize the request of the administration for this appropriation as it appears on page 8 of House Document No. 394 wherein it states that the supplemental appropriation completes the funding of the United States International Geophysical Year program. I was under the impression the funding had previously been completed but apparently not.

Dr. WATERMAN. This is the purpose of the supplemental request.

Mr. YATES. I notice the statement says funds are required at this time to provide for unexpected additional costs of the observational program in the Arctic and Antarctic, to provide for reduction and processing of a greater mass of scientific data from International Geophysical Year observations than earlier anticipated, to complete establishment of the United States World Data Center program, to initiate analysis and research based on International Geophysical Year data and to permit the National Committee which directs the United States program to continue until June 30, 1959.

Dr. Waterman, we will be glad to hear from you and Dr. Kaplan and such other of our distinguished visitors as may want to enlighten the committee.

Dr. WATERMAN. The program is asking for extra funds for several major items. One is for the observational program itself which con-

sists of observers and special equipment to supplement what is already being done and to take advantage of the opportunities which the present observations have provided.

The items on the World Data Center, "Data reduction" and "Publication," as I am sure the committee will recognize, are items which we have previously informed you would continue.

SUMMARY OF OBLIGATIONS

Mr. YATES. Let us put the summary on pages 03 and 04 in the record.

International Geophysical Year—Summary of obligations by activity and program

	Appropriated to date	Supplemental requirements				Total requirements
		Observational program	Data reduction and publication	Other	Total supplemental requirements	
1. Geophysical research related to the Earth's atmosphere:						
(a) Basic atmospheric research:						
Aurora and airglow	$1,835,000	0	0	0	0	$1,835,000
Cosmic rays	1,155,000	0	$15,000	0	$15,000	1,170,000
Ionospheric physics	3,045,500	0	49,500	0	49,500	3,095,000
Meterology	2,194,500	$133,500	33,000	0	166,500	2,361,000
Solar activity	291,500	0	14,000	0	14,000	305,500
Subtotal	8,521,500	133,500	111,500	0	245,000	8,766,500
(b) Earth satellite exploration of the upper atmosphere	20,362,000	0	0	0	0	20,362,000
Subtotal	28,883,500	133,500	111,500	0	245,000	29,128,500
2. Geophysical research related to the planet earth:						
Geomagnetism	1,588,000	0	49,000	0	49,000	1,637,000
Glaciology	949,000	149,000	46,000	0	195,000	1,144,000
Gravity	520,500	36,500	4,500	0	41,000	561,500
Latitudes and longitudes	16,500	0	0	0	0	16,500
Oceanography	1,963,000	7,000	45,000	0	52,000	2,015,000
Seismology	902,000	24,000	24,000	0	48,000	950,000
Subtotal	5,939,000	216,500	168,500	0	385,000	6,324,000
3. Related scientific support activities:						
Rocketry	2,633,500	0	0	0	0	2,633,500
World days	120,000	0	0	0	0	120,000
World data center	944,000	0	0	$165,000	165,000	1,109,000
General related scientific support	974,000	0	0	0	0	974,000
Subtotal	4,671,500	0	0	165,000	165,000	4,836,500
4. Interdisciplinary research	0	0	0	2,025,000	2,025,000	2,025,000
5. Technical direction:						
National Academy of Sciences	1,221,000	0	0	130,000	130,000	1,351,000
National Science Foundation	285,000	0	0	0	0	285,000
Subtotal	1,506,000	0	0	130,000	130,000	1,636,000
Total	41,000,000	350.000	280.000	2,320,000	2,950,000	43,950,000

International Geophysical Year—Summary of supplemental requirements by program and object

	Salaries, allowances, and related costs	Travel	Transportation of things	Communication services	Printing and reproduction	Other contractual services	Supplies and materials	Equipment	Total
1. Geophysical research related to the earth's atmosphere:									
(a) Basic atmospheric research:									
Aurora and airglow	0	0	0	0	0	0	0	0	0
Cosmic rays	$11,000	$1,000	0	0	0	$2,000	$1,000	0	$15,000
Ionospheric physics	39,000	1,500	0	0	0	7,000	2,000	0	49,500
Meteorology	103,725	28,000	0	0	0	4,000	10,525	$20,250	166,500
Solar activity	10,500	0	0	0	$2,000	0	1,500	0	14,000
Subtotal	164,225	30,500	0	0	2,000	13,000	15,025	20,250	245,000
(b) Earth satellite exploration of the upper atmosphere	0	0	0	0	0	0	0	0	0
Subtotal	164,225	30,500	0	0	2,000	13,000	15,025	20,250	245,000
2. Geophysical research related to the planet Earth:									
Geomagnetism	43,000	0	0	0	1,000	4,000	1,000	0	49,000
Glaciology	129,650	19,000	$2,000	0	3,000	0	12,350	29,000	195,000
Gravity	29,650	8,000	0	0	1,000	0	1,950	400	41,000
Latitudes and longitudes	0	0	0	0	0	0	0	0	0
Oceanography	44,500	1,500	0	0	1,000	2,000	3,000	0	52,000
Seismology	38,800	5,000	0	0	2,000	0	2,200	0	48,000
Subtotal	285,600	33,500	2,000	0	8,000	6,000	20,500	29,400	385,000
3. Related scientific support activities:									
Rocketry	0	0	0	0	0	0	0	0	0
World days	0	0	0	0	0	0	0	0	0
World Data Center	130,000	5,500	0	$4,500	12,500	2,000	8,000	2,500	165,000
General related scientific support	0	0	0	0	0	0	0	0	0
Subtotal	130,000	5,500	0	4,500	12,500	2,000	8,000	2,500	165,000
4. Interdisciplinary research	1,578,500	74,000	1,000	11,000	64,000	224,000	60,500	12,000	2,025,000
5. Technical direction:									
National Academy of Sciences	92,000	20,000	2,000	5,000	5,000	0	5,000	1,000	130,000
National Science Foundation	0	0	0	0	0	0	0	0	0
Subtotal	92,000	20,000	2,000	5,000	5,000	0	5,000	1,000	130,000
Total	2,250,325	163,500	5,000	20,500	91,500	245,000	109,025	65,150	2,950,000

Mr. YATES. Please continue with your statement.

Dr. WATERMAN. Let me call attention to the item on special interdisciplinary research.

Mr. YATES. This is your big item.

Dr. WATERMAN. This is a big item. This is taking advantage of what has already been found in the first part of the IGY and relating the different topics and the different projects to one another. For example, there are extensive observations of the sun, and there are corresponding observations on the earth and from balloons. Data from different fields of research should be related. This, Dr. Kaplan can explain in detail.

The remaining item is for technical direction, which would complete the cost of the operation in that sense.

I would like to call on Dr. Kaplan, as Chairman of the United States National Committee.

Mr. YATES. We are always delighted to have Dr. Kaplan here to tell us of the progress of the program and why he needs the additional money.

Dr. KAPLAN. I am glad to have this opporunity. I am sorry Dr. Gould is not with us, but happy to report he is out of the hospital and is convalescing.

Mr. YATES. I did not know he was ill. I am sorry.

Dr. KAPLAN. He had double pneumonia. He went into the hospital in June. We have Dr. Revelle, Mr. Shapley, Dr. Tuve, and Dr. Wexler here. I do not know what your time schedule is.

Mr. YATES. You may have as much time as you want. We would like you to give us, at least, the minimum information as to why you need the money. We would be delighted to receive the information, also, as to how well the program is doing.

SUMMARY OF UNITED STATES IGY PROGRAM

Dr. KAPLAN. I will call on each of them after I make my own statement. I would like to offer for the record a prepared statement. Speaking to my own statement, summarizing, I would like to point out the growth of the program, which is on page 2 of my testimony. I call attention to that because it points out the really remarkable growth of the program and focuses, in part, on the needs that we have presented in this supplemental.

The principal focus, I might say, is the item called the special IGY interdisciplinary research program, to which three of our colleagues will speak. Dr. Wexler will talk about the Antarctic and the Arctic.

The five fields for need are, first, the observational program; secondly, the data reduction and publication; third, the World Data Center, of which I have notes in my testimony prepared by the Director of the Center; fourth, the special IGY interdisciplinary research program; and, finally, the necessary technical direction. Since my colleagues will amplify these things, I might quickly summarize.

OBSERVATIONAL PROGRAM—ARCTIC

On the observational program, the need for this item of $37,500 which is related to the Arctic is, I think, highlighted on the top of page 4. We have had increased costs, and we need this additional money on some of the planned projects.

It is already a very austere program, considering the importance of the Arctic, scientifically.

Mr. YATES. Put pages 11, 12, and 13 of the justifications in at this point, inasmuch as they deal with the statistics relating to the observational program.

(The material follows:)

II. OBSERVATIONAL PROGRAM

1. Budget requirements

	Presently available	Total revised requirements	Difference
Antarctic	$4,583,000	$4,895,500	+$312,500
Arctic	4,473,000	4,510,500	+37,500
Equatorial	4,100,000	4,100,000	----------
Continental	3,791,000	3,791,000	----------
Total	[1] 16,947,000	17,297,000	+350,000

[1] Excludes data reduction funds.

2. Summary of supplemental request, by region and program

	Antarctic		Arctic	Total
	Measurements at stations	Oversnow traverses		
Glaciology	$114,000	$35,000	----------	$149,000
Gravity	----------	36,500	----------	36,500
Meteorology	103,000	----------	$30,500	133,500
Oceanography	----------	----------	7,000	7,000
Seismology	----------	24,000	----------	24,000
Total	217,000	95,500	37,500	350,000

3. Summary of supplemental request, by objects

	Antarctic	Arctic	Total
Personal services	$187,075	$26,750	$213,825
Travel	54,000	5,500	59,500
Transportation of things	2,000	----------	2,000
Supplies and materials	23,025	2,000	25,025
Equipment	46,400	3,250	49,650
Total	312,500	37,500	350,000

PROGRAMS IN ANTARCTIC

Dr. KAPLAN. In the case of the Antarctic, in my prepared testimony I show the stations and number of scientific personnel conducting scientific programs in the Antarctic. Here, again, as we reported in our early June summary of the first 11 months of the International Geophysical Year, we emphasize the fact that the results that have been obtained indicate a need for additional observational work.

Specifically, the budget before you requests $312,500 for continued observational work in the fields of glaciology and meteorology, where some of the newest and most exciting results have been obtained. I think you will see, from my remarks and those of my colleagues, that

this is a dynamic program. In addition, the problems in the Antarctic are different from those in the Arctic. Equipment that proved so successful in the Arctic has to be modified for the Antarctic, and transportation schedules have had to be amended to suit the weather, thereby delaying personnel in returning home. Thus, climate and temperature have both affected our ability to maintain this program and account, in part, for this request for additional funds.

The additional funds requested for the Data Reduction and Publication——

Mr. YATES. Before you leave the Antarctic, I think some reference should be made to the conference report on the urgent deficiency appropriation bill, 1958, where under amendment No. 1, it is indicated that the conferees approved an overall amount of $2 million for the 1959 Antarctic program rather than the $2.4 million which had been approved by the Senate. They approved $1 million and stated that the balance was to be financed by the regular appropriation to the Foundation.

I wonder whether the regular appropriation should not have covered the funds being requested here?

Dr. WATERMAN. The item you mention is for further work in the Antarctic following the IGY program. This is the United States program in the Antarctic to follow the International Geophysical Year. Dr. Kaplan is speaking about the present program.

GENERAL STATEMENT OF CHAIRMAN KAPLAN

Mr. YATES. I think Dr. Kaplan's statement should go into the record at this point.

(The statement referred to follows:)

STATEMENT OF DR. JOSEPH KAPLAN

THE US-IGY PROGRAM

I am glad to have the opportunity to appear before you, Congressman Thomas, and this committee, and talk about the International Geophysical Year. As you know, I think this is one of the most exciting international scientific programs and effective peacetime endeavors ever undertaken. Previously, it has been possible to talk only about the enthusiastic and cooperative response from scientists throughout the world in planning and organizing the IGY; this time, I can tell you something about actual operations and accomplishments to date. I shall be brief in telling you what the IGY has done, for we have recently had the privilege of presenting to you a rather full-scale report on the scientific achievements in this program. Today, I should like to summarize certain key things and direct my remarks principally to the importance of the areas of the United States program for which we are requesting additional funds.

You will recall that when the United States-IGY program was first presented to the Congress, 26 nations had indicated that they would participate. This number grew to 36, and then to 40, and at the present time is 66. More than 10,000 scientists at more than 2,500 observing sites are taking observations in all fields of endeavor in the program. The countries participating are:

Argentina
Australia
Austria
Belgium
Bolivia
Brazil
Bulgaria
Burma
Canada
Ceylon
Chile
China: T'ai-pei
Colombia
Cuba
Czechoslovakia
Denmark
Dominican Republic
East Africa
Ecuador
Egypt
Ethiopia
Finland
France
German Democratic Republic
German Federal Republic
Ghana
Greece
Guatemala
Hungary
Iceland
India
Indonesia
Iran
Ireland
Israel
Italy
Japan
Korea, Democratic Republic of
Malaya
Mexico
Mongolian Peoples Republic
Morocco
Netherlands
New Zealand
Norway
Pakistan
Panama
Peru
Philippines
Poland
Portugal
Rhodesia, Southern
Rumania
Spain
Sweden
Switzerland
Tunisia
Union of South Africa
Union of Soviet Socialist Republics
United Kingdom
United States
Uruguay
Venezuela
Vietnam Democratic Republic
Vietnam (Republic)
Yugoslavia

I should again like to emphasize the dramatic growth in the program over the last few years. This is a growth that no one could have predicted. But it is an eloquent guaranty of the success of our enterprise, and the simplest and most vivid experience of this growth is the following table:

Period	Number of participating countries	Number of observing stations
July 1954, 83d Cong., 2d sess	26	0
February 1955, 84th Cong., 1st sess	36	426
March 1956, 84th Cong., 2d sess	40	1,572
July 1, 1957 (opening of IGY)	66	(1)

(1) More than 2,500

As the international participation increased, the program automatically grew. More extensive coverage of the globe led to more observations, and more observations engendered the base for further pursuit of scientific knowledge. The very success and extension of the total IGY effort means that more data are being obtained, which increases the programs of data storage, data reduction and data exchange. Such further extensions of the program and the remarkable character of some of the findings afford an opportunity to proceed immediately with research, especially interdisciplinary research. The increased tempo of the whole program has, of course, had its impact on the United States program, and has increased the work and responsibilities of the committee and staff. Whereas it was originally expected that the final months of the International Geophysical Year would see a lessening of technical direction, it is now apparent that committee and staff work will have to be extended.

Supplemental funds are needed in five fields: Observational programs; world data center A (United States of America program); data reduction and publication program; a new category, special IGY interdisciplinary research program; and technical direction. The budget before you reports in considerable detail on the phases of the program for which additional funds are requested. I will discuss certain aspects of the program for which we are requesting funds, and other witnesses will describe in more detail our critical need for funds in various of the special fields.

OBSERVATIONAL PROGRAM

The observational program has posed no unsurmountable problems and all planned phases are in operation. However, certain aspects of the program call

for additional support, in particular those in distant and inaccessible areas. Observation posts have been set up in the Arctic and Antarctic regions only with great investments of the time and energies of a large number of people, and we believe that full advantage should be taken of the opportunities now presented. All of the additional funds requested in the observational program in this budget are for operations in the polar regions.

Arctic

As you will remember, the program in the Arctic was a minimal one, planned on an austere basis. At 10 key United States sites in the Arctic our scientists are taking observations in the IGY program as shown here:

Station:	*Scientific personnel*
Floating Ice Island Alpha	6
Floating Ice Island Bravo	10
Thule, Greenland	11
Adak, Alaska	7
Point Barrow, Alaska	11
College, Alaska	25
Blue Glacier, Wash	4
McCall Glacier, Alaska	4
Arctic Aero Medical Laboratory, Alaska	1
Pepperell, St. John's, Newfoundland, Canada	7

Data are being obtained in the Arctic in the following scientific fields: Aurora and airglow, cosmic rays, meteorology, geomagnetism, glaciology, ionospheric physics, oceanography, seismology and gravity. Initial investigations have disclosed significant facts and completion of the planned programs will increase our understanding of the Arctic area and its effect on the other parts of the world. However, increased costs will cause early termination of some of the planned projects unless assistance is forthcoming.

In the budget before you, we are requesting $37,500 in the fields of meteorology and oceanography to cover higher personnel and equipment costs.

Antarctic

Turning now to the very far south, the United States is conducting scientific programs at 6 full-scale IGY stations:

Stations:	*Scientific personnel*
Little America	24
Byrd	13
Amundsen-Scott South Pole	9
Hallett	[1] 4
Wilkes	10
Ellsworth	10

[1] 3 from New Zealand.

The data being obtained in the Antarctic covers the fields of aurora and airglow, cosmic rays, geomagnetism, glaciology, gravity, ionospheric physics, meteorology, oceanography, and seismology. The great expense and effort expended in setting up sites on this frozen continent should not be lightly considered, and the planned projects should be carried on to their planned completion. Results of interest have already been obtained which add much to our knowledge of this area, and additional data will make these fragments of new information more meaningful. Research and study in this area, as you know, are very new, and many of the problems encountered have been different from those experienced in northern areas. Partly because of these unexpected operating conditions and partly because of the higher salaries and longer terms of assignment, additional funds are needed in this program.

The budget before you requests $312,500 for continued observational work in the fields of glaciology and meteorology. Observations in glaciology in the Antarctic have shown that the deformation of the ice shelf under stresses and strains is closely analogous to the much slower processes in large areas of surface rock. Data acquired on oversnow traverses, combined with the station measurements, have forced us to revise our concepts of the structure of this vast continent. We now know that Antarctica is not an ice covered, solid land mass, and continuation of planned programs will add to the completeness of this knowledge.

The meteorological stations in the Antarctic form a vital part of the pole to pole chain. They also form a part of the network of more than 40 Antarctic

meteorological stations of many countries, and the United States Weather Station at Little America is the Antarctic Weather Central. Severe operating conditions have greatly increased maintenance on equipment which must be kept in operation for the entire IGY period to properly fulfill our commitments both national and international.

As I have remarked, operating conditions in the far north and far south are not the same. Ice is harder in the Antarctic and its structure is different, and equipment that proved so successful in the Arctic has had to be modified, strengthened, and frequently repaired. Transportation schedules have had to be amended to suit the weather, and personnel have been delayed in returning home. Thus, climate and temperature have both affected our ability to maintain this program and account, in part, for our request for additional funds.

DATA REDUCTION AND PUBLICATION

The IGY program funded by congressional appropriation was based on existing geophysical research activity. This existing activity has been stimulated by the IGY to grow, and hence more and more contributed programs have augmented the United States effort. For example, early work in the Atlantic Ocean proved so important that Woods Hole Oceanographic Institution and Lamont Geological Observatory reoriented much of their work, which is supported by other agencies, to bolster their IGY program. However, this expansion, so very beneficial to the scientific program, also naturally increases the volume of data.

The concept of the IGY was not in collecting haphazardly great amounts of data; it was designed to collect data in an orderly and integrated fashion. Emphasis was not on the collection of the maximum amount of data, but on the minimum quantity which was judged necessary for the solution of the geophysical questions. Even so, vast quantities of data are accumulating because of the continuous coverage of observations, daily and hourly, and the density of stations needed to provide adequate zonal coverage.

Measurements obtained by the observational program constitute what is called the raw data—such as photographs of the sky in the polar region on a 5-minute schedule; tables of numbers representing concentrations of chemical components in, and the temperatures of, water samples from all of the oceans. Miles of magnetic tape on which are recorded sounds of the outer atmosphere, and thousands of paper records on which the continuous vibration of the earth is traced will be accumulated in collecting raw data. Most of these data must be reduced before they become the tool of the research scientist.

The problems of data reduction are complex and vary in each field and in each experiment. Some types of raw data can be satisfactorily described by a finite number of reductions. The oceans, for example, can be described by specifying the time, date, temperature, density, the concentration of chemical solutions of the samples together with their location and depth at which taken. The sample of water is used up; it has given us all the information it can, and we cannot go back to further examine it. Other raw data are reduced and then retained for later study if desired. In geomagnetism, records from a magnetograph are scaled and hourly values read off; hourly mean values are obtained and the greatest fluctuations during a period are scrutinized as a measurement of the storminess of that period. These data are not used up and are not exhausted; they must be kept available to scientists.

The IGY was planned as an integrated and simultaneous endeavor, and observations are now being taken on a synoptic schedule. International agreements assure that not long after the close of the observational period, most of the data must be processed and published as it is received; as a matter of agree- must be processed. The amount of data being received, the time required for reducing the data, and the availability of scientific manpower all argue that the data must be processed and published as it is received: as a matter of agreement, data must be transmitted in some instances within 2 months after collection. Additional funds in the amount of $280,000 are requested for additional scientific personnel, computation machine time and supplies and printing costs.

WORLD DATA CENTER A

For the safekeeping of the data and for making these data accessible, three world data centers have been established: World data center A in the United States; world data center B in the U. S. S. R.; and world data center C in Western Europe, Japan, and Australia. All three world data centers are in operation and data are flowing.

World data center A has been set up in the National Academy of Sciences, here in Washington, and institutions at 11 locations in the United States have been designated as subcenters for the different disciplines. The subcenters were chosen on the basis of (i) a history of continued activity in the appropriate geophysical field; (ii) a history of continued activity in acquiring and archiving of the geophysical data and competence to do research with such data; and (iii) on a willingness to continue this function after the termination of support by IGY funds. The responsibilities of each subcenter are to archive and keep safe 1 set of the data, to reproduce and transmit all data to the other 2 IGY data centers, to prepare indices of data, to prepare catalogs of appropriate data, and to reproduce sets of data for scientists and institutions upon request, but at no cost to the data center.

As I remarked before, data are flowing to the centers. It is expected that the volume of data will increase as the observation period goes on, reaching a peak in 1958. The flow of data should continue at that maximum level throughout at least half of 1959, and then be followed by a cleanup period extending perhaps into the first half of 1960. International cooperation has grown in this program, and a tremendously larger volume of data is being obtained than had heretofore been even hoped for. This is good; it reflects the interest of the world in this scientific endeavor. It also provides more data from more places for further study, and assures that worldwide data is available for research.

In preparing for discussions of this request for funds, I had set as my objective a summary statement of the importance of geophysics of each principal element of the supplemental budget, leaving to others a more detailed discussion of our needs for these funds. However, the concept of international centers as repositories of scientific data in many related fields, represents a unique contribution to the IGY, and I believe that you would be interested to learn more fully how this is working out. For this purpose, I am enclosing a report, Annex A on Data Center activities, which provides the background for our present discussions and proposals.

I should now like to discuss for a few moments the specific request for $165,000 which is before you for this program. There are several reasons which explain the added work which center A has been called upon to perform.

First. When I appeared before this committee last year, there were 58 nations participating in the International Geophysical Year. Now the number has increased to 66. From the point of view of international cooperation, this means that virtually the entire community of nations is participating in IGY; scientifically, this means that we shall have IGY data from regions from which it has been impossible or very difficult to obtain data in the past. Moreover, all the major nations have, in the last 2 years, greatly increased their programs of experimentation; fully twice as much data will result from this alone.

To the data centers, the increase in the number of nations participating in the IGY also represents additional responsibilities for processing and exchanging data from many new stations in several disciplines. The increased volume of scientific data is most desirable and important, but I must emphasize that our plans had not contemplated this fortunate expansion in the program when the original request for the United States data center activities was presented to you.

Second. The increase in the number of stations is much greater than would be predicted from the increase in the number of participating nations. Scientists in most nations have been eager to utilize facilities, especially in remote areas, to establish additional experiments wherever this could be done. In other respects, many nations have expanded their programs, establishing stations wherever possible to capitalize on the coordinated IGY program and to assure adequate geographic coverage in several scientific disciplines. I should like to remind the committee that one of the basic purposes of IGY was to obtain synoptic measurements in all geophysical disciplines: Therefore, the data from these added stations are of the greatest importance. The variety and quantity of data which will be available to the world data centers exceeds our most optimistic hopes. At the same time, these developments have also expanded the workload which must be borne by the data centers.

These reasons have all contributed to our need for additional funds with which to bring the operations of Data Center A to a successful conclusion. The international commitments which we have undertaken must be fulfilled. The advantages to our own scientists are obvious but I believe, bear repeating here: The universal data in all disciplines which we shall have in our cities provides the basis for future research and analysis in geophysics. Our scientists will be active for many years to come in analyzing and correlating the

observational findings of the IGY. Out of this work will come new understandings of our physical environment many of which, I am sure, will contribute to our own economic and social well-being. Accordingly, I strongly urge you to support the modest request which is now before you for the completion of this program.

I should like to emphasize, as strongly as possible, one fact. The data centers provide a most important function for science. This function serves as the one indispensable link between the 18 months' observational program and the research which will follow. The worldwide measurements, in which so many nations have invested so freely and so heavily, will be of little value unless the data are gathered together for use by scientists, to analyze, coordinate, study, use to confirm present theories and to develop new ones. This research represents the final product of the IGY which promises to be so valuable, not only to theoretical scientific advances, but also to innumerable practical applications of inestimable value to our civilization.

THE SPECIAL IGY RESEARCH PROGRAM

So far, I have talked about the collection of data, their reduction, and their preservation for research purposes. Now I would like to say something about using that material. In any scientific program, data first must be obtained and then must be analyzed and studied. Without the second step, the whole program comes to naught. Data, no matter how good, stored away to lie dormant, serve no useful purpose.

The IGY was planned to acquire information which would provide a better description of the earth as an entity. One of the factors leading to the inception of this international undertaking was the requirement for a reliable and comprehensive picture of the large-scale geophysical processes which would expand our understanding of the earth and its physical environment, and to permit the verification or modication of existing theory. This highlights a basic aspect of scientic research: The complete and reciprocal dependence between scientific observations and scientific theory.

The observations are being obtained and the data are being put into usable form. These data must be studied to reap the benefits of the large amount of work and great expense that has gone into the program; to gain any scientific knowledge. The analyses should start now to capitalize on the IGY impetus and recent scientific stimuli and to keep this Nation in the forefront of the scientific world. Most critically the data should be studied across the entire field of all disciplines, on an interdisciplinary basis in order to establish the dependence of one on the other.

The projects proposed will permit us to search out the interdependence existing between the scientific phenomena.

The research of IGY scientific data falls into two classes:

(1) *Normal research.*—For several decades individual scientists in the separate fields will refer to this vast reservoir of data in conducting their studies. The data will be used to evolve theories, to test those theories, and either confirm or deny them. The present program does not cover this. Research of this type is expected to be supported from regular sources presently available, including extensive university support at no cost to the taxpayer.

(2) *Directed research.*—This is research which cuts across particular fields of geophysics and attempts to relate phenomena in one program to that in another. For example, close interdisciplinary relationships exist between auroral effects, ionospheric physics, geomagnetism and events occurring on the sun. Similarly, meteorology does not stand alone. Observations in oceanography and glaciology must be integrated with those in meteorology before a better comprehension of the heat and water budget of the earth can be achieved.

That is what we mean by directed research, and the purpose of our request for funds in the present supplemental budget. Such coordinated research programs are exciting even in prospect, for this is virgin territory which we are proposing to investigate. Existing research institutions have been able to do little in this field, for their sources of funds are usually applied to the separate scientific fields for which these institutions were established.

A really unique opportunity is at hand to explore the geophysics of the earth at the moment. This stems in large measure from the great scientific impetus of the IGY and its expansion during the last 3 years, and startling and exciting discoveries that have already been made during the observation period. The whole world is at present excited about science, and individuals and teams are

eagerly awaiting the opportunity to explore this field. At great effort outstanding scientists and renowned institutions have been enlisted and coordinated into a timed worldwide operation. These people and these organizations are even more excited now as the great potential of the IGY data becomes apparent; we are on the threshold of scientific breakthroughs and scientists are anxious to be amongst the discoverers.

The ultimate success of the IGY undoubtedly depends upon the rapidity with which such a special research program is begun, and the forcefulness with which it is carried out. Scientific breakthroughs that may result could have such consequences as these:

Major, fundamental discoveries relating to—

(i) Possible new developments in communications resulting from an understanding of the ionosphere and its relation to auroral events and the magnetic currents high in space;

(ii) Determination of the dependence of weather on high atmosphere phenomena and solar events might permit us to develop vastly improved weather and storm forecasting; and

(iii) The makeup of the upper atmosphere through satellite flights which will certainly open the way to further exploration of space.

We strongly believe that our scientists must have the opportunity to lead in the research on the IGY data. Moreover, our teams are available, for the IGY has impelled institutions throughout the country to gather geophysicists together during the last few years. These teams, everywhere, have mature leaders, scientists whose renown is worldwide and whose scientific imagination is assurance of the most effective application of the data which have been gathered. The stimulus is also present, for never before have our scienists had the opportunity which now is at hand. All of us on the National Committee believe that now is the time to grasp this great opportunity. The stimulus must not be allowed to dissipate, nor these teams scattered to other pursuits.

Some nation is going to back a directed and immediate interdisciplinary special research program and the United States must be that nation. Here I would like to repeat a comment by I. P. Bardin, chairman of the Soviet IGY Committee, on the results of work already conducted and on those tasks which will remain for scientists to engage in during the last half of the IGY:

"Soviet scientists must seriously think about organizing the processing of IGY materials and starting the appropriate scientific research work. In the very near future state importance should be attached to these problems because without proper organization of such investigations the efforts and money spent on accomplishing the program of observations will not be realized. We should strengthen the number of scientific institutions and charge them with fundamental tasks in this area.

"At present we should boldly examine the program of geophysical and certain other institutions from the viewpoint of the necessity of enlisting qualified specialists to work on IGY materials."

I urge you to give your most serious consideration to our request for 2.025 million with which to initiate this special program of interdisciplinary research. I have said repeatedly, but feel I must say again: as scientists, we have an opportunity now which is unique; we do not wish to be responsible for failing to seize upon it. The United States must remain in the forefront of research, as it has in the IGY observational program.

Annex A

Summary Report on World Data Center A

(Prepared by Hugh Odishaw, Director, IGY World Data Center A)

According to the recommendation of the Special Committee for the International Geophysical Year (CSAGI) Assembly at Brussels in 1955, three world data centers were established to house the data resulting from observations made during the International Geophysical Year. World Data Center A, consisting of 11 subcenters, was established in the United States; World Data Center B with four subcenters in the U. S. S. R.; World Data Center C was established in eight nations of Western Europe: Belgium, Denmark, France, German Federal Republic, Italy, Sweden, Switzerland, and the United Kingdom, with additional subcenters in Australia and Japan.

It was the intent of CSAGI to have a complete set of data in each of the three World Data Centers, A, B, and C. These three centers provide protection against the loss or destruction of one set of data and serve the geographical convenience of research scientists who will be using the data in the months and years ahead. It is expected, for example, that the principal users of World Data Center A will be in the United States and in the Western Hemisphere.

World Data Center A was established in 11 institutions in 8 cities of the United States and Alaska. The United States National Committee believes that the interests of science are served best by establishing a subcenter for each scientific discipline in an institution which has a history of scientific interest and competence in the appropriate geophysical field, and which has the facilities to maintain the data center after the termination of IGY. Subcenters of the United States world data centers were established as follows:

1. Airglow and ionosphere: Central Radio Propagation Laboratory, National Bureau of Standards, Boulder, Colo.
2. Aurora (instrumental): University of Alaska, Geophysical Institute, College, Alaska.
3. Aurora (visual): Cornell University, Ithaca, N. Y.
4. Cosmic rays: University of Minnesota, Minneapolis, Minn.
5. Geomagnetism, gravity, and seismology: United States Coast and Geodetic Survey, Washington, D. C.
6. Glaciology: American Geographical Society, New York, N. Y.
7. Longitude and latitude: United States Naval Obeservatory, Washington, D. C.
8. Meteorology and nuclear radiation: National Weather Records Center, United States Weather Bureau, Asheville, N. C.
9. Oceanography: Texas A. and M. College, College Station, Tex.
10. Rockets and satellites: National Academy of Sciences, Washington, D. C.
11. Solar activity: High Altitude Observatory, University of Colorado, Boulder, Colo.

A field-by-field summary follows:

Airglow.—Centers: A—Central Radio Propagation Laboratory, National Bureau of Standards, Boulder, Colo. B—Moscow. C–1—Paris. C–2—Tokyo. Data are to be tabulated, with provisional data sent to data centers within 3 months of the end of a month's period of observation. At present, the United States center has receved from each world data center and sent to each world data center a small amount of airglow data.

Aurora (instrumental).—Centers: A—Geophysical Institute, University of Alaska, College, Alaska. B—Moscow. C—Stockholm. Data are to be dispatched to the data centers in monthly batches with no more than 1 month's delay after an observing period, from those stations which are served by normal postal facilities. At present, the United States center holds films from most United States all-sky camera stations and some South American stations. One set of films has has been dispatched to the other world data centers.

Aurora (visual).—Centers: A—Cornell University, Ithaca, N. Y. B—Moscow. C—Edinburgh. Regional Centers: A—Ithaca,[1] Ottawa, Buenos Aires,[1] Melbourne, Wellington, Mexico City. B—Moscow,[1] Delhi. C—Edinburgh,[1] Pretoria, Tokyo.[1]

Reports are forwarded to the regional center where they are formulated into charts or tables, which are forwarded to the data centers in monthly batches within 3 months.

In the United States there are 424 active volunteer observers from whom 16,000 positive and 50,000 negative reports of aurorae have been received. Twenty thousand positive and 300,000 negative reports have been received from the United States Weather Bureau. From these reports, over 1,000 auroral maps for 15-minute intervals have been drawn at Cornell.

To date film of 3 to 4 months' data has been sent to other world data centers; none has yet been received from these centers.

Several commercial firms have shown an interest in the data, and have requested catalogs.

Cosmic rays.—Centers: A—University of Minnesota, Minneapolis, Minn. B—Moscow. C–1—Stockholm. C–2—Tokyo. Data are to be sent to world data centers within 3 months after the end of a month's observations. CSAGI strongly urged that cosmic-ray data be sent to all data centers directly from

[1] Places which prepare charts.

the stations. This request has been adhered to by a majority of the stations, simplifying the interchange between data centers.

The flow of cosmic-ray data to the United States center is steadily increasing. At present, 31 percent of the data due are in, compared with 15 percent in January. This means that 5 times more data reached center A in the first 5 months of 1958 than in the last 6 months of 1957. The flow is from stations in all parts of the world. The data from most U. S. S. R. stations flow regularly and promptly: from the station in Moscow the data are received in a printed journal. Center A has received data from 20 of the 35 nations participating in IGY.

To date, two requests for data have been received by the United States Center for Cosmic Rays: One small request from the United States; one request from Canada for all available data for 12 specified stations.

Geomagnetism.—Centers: A—United States Coast and Geodetic Survey, Washington, D. C. B—Moscow. C–1—Charlottenlund, Denmark. C–2—Kyoto, Japan. Magnetograms and tellurigrams are sent to each center for a 6-month period within 4 months of the end of this period, or more frequently if possible. C, K, and Q indices are forwarded to data centers within 1 month after the observation period.

Microfilm of magnetic records from stations in the Western Hemisphere has been forwarded from center A to the other centers. No data have been received from the other centers, but geomagnetic data have been received from 71 stations in 28 nations, including 25 stations in the U. S. S. R., which are quite prompt in their transmittal. Many requests have been received for data, including requests from the entire chain of variograph stations in the Western Hemisphere.

To date, several visitors have come to the United States Center for Geomagnetism including visitors from governmental agencies, private institutions, and universities.

Gravity.—Centers: A—United States Coast and Geodetic Survey, Washington, D. C. B—Moscow. C—Uccle, Belgium.

Pendulum and gravimeter data are to be sent to the center at Paris as soon as possible. These data will be coordinated and made available to the world data centers.

Earth-tide data are to be sent to centers within 3 months of the end of each month's observations.

The flow of data to the United States Center in Gravimetry includes a few data from earth-tide studies at 3 stations in Japan and 1 station in Hungary.

Glaciology.—Centers: A—American Geographical Society, New York, N. Y. B—Moscow. C—Cambridge. Progress reports on glaciological expeditions are to be submitted within 3 months after the end of the field season; the basic data will be forwarded within 6 months, with the understanding that Arctic and Antarctic data may not be fully reported until December 1960.

At present, progress reports have been received by the United States Center for Glaciology from projects in the United States, Canada, and New Zealand. Reports are sent directly to each center, hence there has been no need for exchange between world data centers. United States Antarctic data from the first field season are now being reduced for analysis and transmittal to the data centers by the men who gathered the data. The glaciological data are being reduced at Ohio State University; the seismic and gravity data obtained in Antarctica are being reduced at the University of Wisconsin.

Ionospheric physics.—Centers: A—Central Radio Propagation Laboratory, National Bureau of Standards, Boulder, Colo. B—Moscow. C–1—Slough, England. C–2—Tokyo, Japan. Stations or responsible organizations are to forward tabulated and graphical data and ionograms for a particular month to the appropriate world data center within a period of 3 months from the end of the month of observations.

The United States center has received an immense quantity of data, including some 320,000 feet (about 61 miles) of film, which has been processed at the center. Data have been received from the other data centers, and center A is fully current in its dispatches to the other centers. To date, 14 requests for data have been received, including requests for entire months of ionospheric data. In addition, several scientists have visited the center to work with the data on the premises.

Longitude and laittude.—Centers: A—United States Naval Observatory, Washington, D. C. B—Moscow. Permanent service: Bureau Internationale de l'Heure, Paris, France. International Latitude Service, Turin, Italy. Astrolabe data are sent to Paris, moon-position data to Washington. The time schedules for transmittal of data are determined by these two centers.

The United States center is concerned primarily with moon-position data. Data from the other projects will be archived at this center and available to interested persons. Moon-position photographic plates from 20 observatories are forwarded for reduction, tabulation, and computation, most of which is done at the United States Naval Observatory. Results of these computations will be printed by 1960.

Meteorology.—Centers: A—National Weather Records Centers, United States Weather Bureau, Asheville, N. C. B—Moscow. C—Geneva. Data are in tabular form for all projects in meteorology. These data are sent to at least two of the data centers: To center C and to A or B. Data in synoptic and dynamic meteorology (surface and upper air) are forwarded twice monthly. Data in radiation, ozone measurements, and atmospherics are forwarded as far as possible on a monthly basis, with a delay of not more than 6 months.

Data have been received by center A from 38 countries. Microfilm for 3 months of data has been sent to the U. S. S. R. center and a similar amount has been received from this center.

The flow of data to the United States center from the United States and other North American stations alone amounts to 25,000 punched cards per day—for the entire world almost 100,000. These data are reproduced in microcards by the World Meteorological Organization.

Oceanography.—Centers: A—Texas A. and M. College, College Station, Tex. B—Moscow. Data from cruises are to be sent to the data centers within 6 months of the end of the cruise. At present, sea-level data from nine countries have been received by the United States center. Cruise reports have been received from 8 nations for cruises of 23 ships. Data have been sent to and received from the U. S. S. R. center in oceanography.

Rockets and satellites.—Centers: A—National Academy of Sciences, Washington, D. C. B—National Academy of Sciences, Moscow. Preliminary flight information summaries for rocket launchings are to be sent to the data centers within 4 weeks of the date of launching. These reports give the time and location of launching and the geophysical experiments being performed.

Announcements of satellite launchings are to be made as soon as possible within the first 24 hours after launching. The launching authority is responsible for communicating orbital predictions to cooperating observers at appropriate intervals. Observations in turn are communicated to the launching authority who has primary responsibility for predictions. A full report is to be made 12 months after the end of each experiment.

As part of its obligation to make available to interested scientists the results of rocket and satellite launchings, the United States Center for Rockets and Satellites has initiated 2 series of reports—1 for rockets, 1 for satellites. Three issues of the latter series have been published to date. These volumes include much useful preliminary data which could not be conveniently disseminated in any other way.

Solar activity.—Centers: A–1—High Altitude Observatory, University of Colorado, Boulder, Colo.; A–2—Central Radio Propagation Laboratory, National Bureau of Standards, Boulder, Colo.; B—Moscow, Crimea; C—Zurich, Switzerland; Arcetri—Firenze, Italy; Cambridge, England; Meudon, France; Pic du Midi, France: Baden, German Federal Republic; Sydney, Australia.

The discipline called solar activity is subdivided into 10 phenomena of solar activity. Data for each of these 10 subdivisions is archived at one each of the centers listed for A, B, and C. The Central Radio Propagation Laboratory is center A for Wolf sunspot numbers, special sunspot numbers, and radio emission. The High Altitude Observatory is the United States center for all other solar activity data.

Data flow very rapidly in this discipline. For example, solar flares of major importance are communicated by telegram within a few minutes of this occurrence to the regional warning center: monthly final lists of flares are dispatched by the seventh of the following month if possible. In one instance, such a report from the U. S. S. R. for one month was received by center A as early as the 10th of the following month.

As part of the intermediate pubication, preliminary to final publication in the IGY Annals, the United States center has published a report of surges and active prominence regions for the month of July 1957. A similar report for the first 6 months of IGY (July–December 1957) will be published shortly.

The various reports which will come out of the data center for solar activity are expected to satisfy the needs of most scientists interested in solar activity

data. Several requests for data have been received to date, most of which have been met by suitable portions of the data published in the intermediate reports.

Seismology.—Centers: A—United States Coast and Geodetic Survey, Washington, D. C.; B—Moscow; C—Strasbourg. Most seismic data are in the form of monthly bulletins issued by individual stations or networks of stations. These bulletins are made available to the data centers within 2 weeks of their preparation, and are normally sent to all world data centers, eliminating the need for exchange between centers. The United States center has received bulletins from 31 nations which are operating seismic stations in cooperation with IGY. This bulletin includes data from 156 stations, 49 of which are in the U. S. S. R.

Nuclear radiation.—Centers: A—National Weather Records Center, United States Weather Bureau, Asheville, N. C.; B—Moscow; C–1—Stockholm; C–2—Tokyo, Japan. Data on artificial and natural radioactivity in the atmosphere and oceans are forwarded to the data centers within 3 months of the end of each month's observation. Data from isolated stations are sent at their earliest convenience; data from expeditions are sent within 6 months of the return of the expedition.

The United States World Data Center has, in common with the other data centers, the responsibility of archiving one complete set of IGY data. Although these data shall be available to anyone at the cost of reproduction, it is thought that the majority of requests for data from the United States center will come from scientists in the Western Hemisphere, especially from the United States. The geographical convenience of these data centers and their location in institutions in which pre- and post-IGY data are also available will be of great advantage to scientists in the United States.

The United States data centers have the international responsibility of reproducing and transmitting data to world data centers B and C. CSAGI Bureau made a careful attempt to equalize the burden of reproduction of data. At present, center A is meeting its obligations, and, in turn, centers B and C appear to be meeting their obligations. It is important that world data center A continue to meet its obligations (i) to achieve data received; (ii) to forward data to the other data centers as required; (iii) to make these data available to interested scientists.

Center A issued its first 6-monthly catalog of data in January 1958, and will issue the second such catalog in June to include data received by the centers prior to June 1. In several disciplines for which it seemed warranted (cosmic rays, oceanography, airglow, ionosphere, meteorology, rockets and satellites, and solar activity), interim catalogs and reports have been issued.

Mr. ODISHAW. Supplementing Dr. Waterman's remark, perhaps one thing should be pointed out: That the opportunity to continue important scientific work in the Antarctic afforded by the International Geophysical Year in terms of logistic support is unique.

DATA REDUCTION AND PUBLICATION

Dr. KAPLAN. The next item is "Data reduction and publication." This is an item for $280,000. Here I would like to point out that again the International Geophysical Year has stimulated the existing activity to the point that the amount of data and the problems of data reduction and publication, which are rather complicated, have grown. This is another example of the dynamic nature of the program. It is important, of course, to reduce these data immediately in order to make it available for scientific work.

On the World Data Center A, which is our responsibility——

Mr. YATES. Before you leave "Data reduction and publication," I think the charts which appear on pages 31 and 32 should go in the record.

(The material referred to follows:)

IV. Data Reduction and Publication

1. Budget requirements

	Presently available	Total revised requirements	Difference
Aurora and airglow	$431,200	$431,200	
Cosmic rays	37,000	52,000	+$15,000
Geomagnetism	90,400	139,400	+49,000
Glaciology	85,000	131,000	+46,000
Gravity	83,000	87,500	+4,500
Ionospheric physics	170,000	219,500	+49,500
Longitudes and latitudes			
Meteorology	109,400	142,400	+33,000
Oceanography	38,000	83,000	+45,000
Rocketry	51,000	51,000	
Seismology	120,000	144,000	+24,000
Solar activity	26,000	40,000	+14,000
World days			
Total	[1] 1,241,000	1,521,000	+280,000

[1] In the "Summary of obligations by activity and program" table, these funds are included in individual program totals.

2. Summary of supplemental request by objects

	Amount
Personal services	$236,000
Travel	4,500
Printing and reproduction	10,000
Other contracutal services	19,000
Supplies and materials	10,500
Total	280,000

WORLD DATA CENTER A

Mr. Yates. Turning to World Data Center A, with reference to that I think we should put in the record at this point pages 24 and 25 so that that can furnish the basis for your explanation.

(The materital referred to follows:)

III. World Data Center A (United States of America) Program

1. Budget requirements

	Presently available	Total revised requirements	Difference
Aurora I (instrumental)	$137,000	$149,000	+$12,000
Aurora II (visual)	89,500	103,500	+14,000
Airglow and ionosphere	150,000	162,500	+12,500
Cosmic rays	58,000	72,000	+14,000
Geomagnetism, gravity, seismology	106,000	119,000	+13,000
Glaciology	62,500	76,500	+14,000
Longitude and latitude			
Meteorology	35,000	83,500	+48,500
Oceanography	62,000	76,000	+14,000
Rockets and satellites	31,000	41,000	+10,000
Solar activity	62,000	75,000	+13,000
Technical coordination	151,000	151,000	
Total	944,000	1,109,000	+165,000

2. Summary of supplemental request by objects

	Amount
Personal services	$130,000
Travel	5,500
Communication services	4,500
Printing and reproduction	12,500
Other contractual services	2,000
Supplies and materials	8,000
Equipment	2,500
Total	165,000

Mr. YATES. Proceed, Dr. Kaplan.

Dr. KAPLAN. Under the World Data Center A the additional amount which we ask for, $165,000, is the result of the gradual increase in the number of participating nations, to which I pointed earlier. In addition, there is a large increase in the number of stations which no one could have foreseen. The increase is much larger than could have been predicted from the number of participating nations. The eagerness of scientists to use the data centers has added considerably to the flow of data.

I think one point should be very strongly emphasized here, and that is that the data centers are really the link between the tremendous amount of work that will have been done by the time the 18 months' observational program has been completed and all the subsequent research. The worldwide measurements will be of little value unless the data are gathered together for use by scientists to analyze, coordinate, study, use to confirm present theories and to develop new ones.

The next item, to which I should like to speak perhaps in more detail and to which my colleagues will speak in considerably more detail, is the special International Geophysical Year research program.

Mr. YATES. You mean the interdisciplinary research program?

Dr. KAPLAN. Yes.

Mr. THOMAS. Mr. Chairman, before we leave that World Data Center A, I think page 26 should be in the record.

(The page referred to follows:)

WORLD DATA CENTER A UNITED STATES PROGRAM

3. INTRODUCTION

Following an extensive and detailed survey of United States needs and international obligations in this area of IGY activity, the United States National Committee for the International Geophysical Year approved the establishment of subcenters in the following geophysical disciplines:

Aurora I (instrumental) : Glaciology.
Aurora II (visual) : Longitude and latitude.
Airglow and ionosphere : Meteorology.
Cosmic rays : Oceanography.
Geomagnetism, gravity, seismology : Rockets and satellites, solar activity.

In its consideration of this program, the United States National Committee felt that the interests of science are best served by decentralizing IGY World Data Center A and establishing subcenters on a discipline basis, particularly at institutions where pre- and post-IGY data in a given field can be made available.

Institutions have already been designated as subcenters for each of the above disciplines and in general, have been selected on the basis of the following qualifications:

1. History of continued scientific activity and interest in the appropriate geophysical field.

2. History of continued activity and interest in acquisition and archiving of geophysical data in a given field and competence to do research with such data.
3. Willingness to continue this function after termination of support by International Geophysical Year funds.

The United States National Committee deemed these considerations to be significant for several reasons. For example, (*a*) they reveal competence to undertake the IGY data-center assignment; (*b*) they indicate the availability of competent staff and adequate facilities; and (*c*) they suggest that the IGY effort can be enhanced by the selected institutions, both scientifically and operationally.

The basic responsibilities of each of the subcenters are:

1. Archiving and safekeeping of one set of all IGY data in the appropriate field.
2. Reproduction and transmission of all data to IGY Data Centers B and C.
3. Reproduction of additional sets or partial sets of such data for scientists and institutions, upon request and at actual cost.
4. Preparation of indexes (and/or bibliographies, as appropriate) of data in the subcenter.
5. Preparation of catalogs of all appropriate data for submission to the Special Committee for the IGY (CSAGI).

Function 3 is considered to be self-liquidating, and neither the present nor the previous request includes funds for this operation. The remaining responsibilities are covered in this and the previous request for funds. A review of subcenter operations to date reveals the need for additional funds to effectively discharge United States responsibilities. The detailed requirements for each of the subcenters are shown below.

ORGANIZATION OF WORLD DATA CENTER A

Dr. KAPLAN. Mr. Odishaw has prepared annex A, which is a summary report on World Data Center A, which has been set up in the National Academy of Sciences here in Washington, and institutions at 11 locations in the United States have been designated as subcenters for the different disciplines.

Mr. THOMAS. Where will the subcenters be located?

Dr. KAPLAN. The subcenters are located in institutions listed in annex A.

Mr. YATES. That has been put in the record.

Dr. KAPLAN. In each case, the reason for the establishment of the archive is given; essentially, we have selected places where there is a history of interest and competence in the particular geophysical field, and places where there is an indication of a strong desire to continue this function after the termination of support by IGY funds.

You will notice there is a considerable spread. You will notice, Mr. Thomas, that, in the field of oceanography, in which Dr. Revelle is particularly interested, the subcenter will be located at Texas A. & M. at College Station, Tex.

The subcenter dealing with glaciology, in which Dr. Field has taken one of the most active parts in that program, will be at the American Geographical Society in New York.

The longitude and latitude subcenter is, logically, in the United States Naval Observatory in Washington.

The subcenter dealing with meteorology and nuclear radiation is in the National Weather Records Center of the United States Weather Bureau at Asheville, N. C.

This has been a very carefully and successfully carried out program.

In addition to listing these subcenters, there is also a brief report on each of the disciplines as to the flow of data to date.

SPECIAL IGY RESEARCH PROGRAM

In the part of my statement dealing with the special IGY interdisciplinary research I contrast what I call normal research, that has been going on for several decades by individual scientists in the separate fields, with the very exciting new area of directed research in which several different fields are brought together to focus on a particular problem. For example, close interdisciplinary relationships exist between auroral effects, ionospheric physics, geomagnetism, and events occurring on the sun. Similarly, meteorology does not stand alone. Observations in oceanography and glaciology must be integrated with those in meteorology for a better comprehension of the heat and water budget of the earth.

REVOLUTION IN GEOPHYSICS

I think it would be an understatement to say geophysical science is undergoing a major revolution as a result of the International Geophysical Year, and this major revolution and its success will depend on the rapidity with which the special research programs are begun. That is one reason why we do not want to lose time. There are other ramifications, which my colleagues can give you. I wish to point out the three examples I noted on page 10 of my statement.

One is the field we have referred to before of communications. It is clear one cannot understand communications and arrive at new developments without bringing together areas that heretofore have been separately studied. There must be an understanding of the ionosphere and its relation to auroral events and the magnetic currents high in the upper atmosphere. This marks a new type of interdisciplinary approach in the field of geophysics.

Second is the field of weather and the determination of the dependence of weather on high atmosphere phenomena and solar events, thus permitting the development of improved weather and storm forecasting. With the tremendous amount of data taken simultaneously in the International Geophysical Year, the possibility of making a major impact in that field is present.

And the third example, with which I think you are familiar, is the number of disciplines going into our understanding of the upper atmosphere. Perhaps every scientific discipline enters into that.

U. S. S. R. VIEW ON GEOPHYSICAL RESEARCH

A very fine statement was made recently by my opposite number in the U. S. S. R., I. P. Bardin, chairman of the Soviet IGY Committee. With your permission I would like to read that statement. It is an unemotional statement with which I agree very strongly, and I quote:

> Soviet scientists must seriously think about organizing the processing of IGY materials and starting the appropriate scientific research work.

Here he refers to just this kind of interdisciplinary approach. [Continuing quoting:]

> In the very near future state importance should be attached to these problems because without proper organization of such investigations the efforts and money spent on accomplishing the program of observations will not be realized.

We should strengthen the number of scientific institutions and charge them with fundamental tasks in this area.

At present we should boldly examine the program of geophysical and certain other institutions from the viewpoint of the necessity of enlisting qualified specialists to work on IGY materials.

I think here I might add that you have noticed as the IGY program is developed it broadens the word "geophysics," and it is this broad spread of intellectual problems that Bardin is referring to and that my Committee referred to. The amount of $2,025,000 in this budget represents an extremely austere approach to what I personally consider one of the most important scientific endeavors we can do in the next few months.

DEVELOPMENT OF PHYSICAL REQUIREMENTS

Mr. YATES. Do you feel this amount will adequately take care of this work?

Dr. KAPLAN. No, I do not.

Mr. YATES. Why did you ask for this amount, then?

Dr. KAPLAN. Well, may I first point to page 10 of the budget document, where we have listed the amounts requested.

Mr. YATES. This is already in the record.

Dr. KAPLAN. This is entitled "Summary of supplemental estimate." The $350,000 item for the observational program was originally $650,000. The $165,000 item for World Data Center A was originally $525,000. The item of $280,000 for data reduction and publication was originally $600,000. This particular item of special IGY interdisciplinary research of $2,025,000 was originally $3,200,000. And technical direction was $280,000. That is a total of $5,255,000.

That $3,200,000 for special IGY interdisciplinary research was a cutback from $5 million which, in the considered opinion of the United States National Committee and based on its sense of responsibility to the Nation, could profitably have been applied.

Mr. YATES. Then let us find out the genesis of this figure. You say you started out with $5 million. How did you arrive at the figure of $5 million? Will you tell the committee the procedure?

DEVELOPMENT OF INTERDISCIPLINARY RESEARCH PROGRAM

Dr. KAPLAN. I would like to call on Dr. Odishaw.

Dr. ODISHAW. During the last 18 months as the National Committee began to see the implications of the International Geophysical Year in terms of the growth in the program over the successive years that we have appeared before this committee. Also, most recently, some of the preliminary results have come to hand and rather radical results were recognized. The National Committee began to think about its responsibilities from a scientific point of view. In considering problems of research this area of interdisciplinary studies appeared to present unique opportunities. The Committee consulted with scientists all over the country and it appeared there were proposals in hand as a result of this inquiry totaling something more than $5 million. The National Committee then reviewed those proposals to determine those that were the most important and those that were interdisciplinary in nature, because the Committee felt this was the area that was most productive.

Mr. YATES. When you say you contacted scientists all over the country, was it for the purpose of ascertaining whether the scientists could carry on the interdisciplinary research you contemplated?

Dr. ODISHAW. Yes, and to see what their reaction would be to the opportunities afforded by this area.

Mr. YATES. I assume you will tell us why you did not ask the National Science Foundation for funds rather than coming to this committee for funds?

Dr. ODISHAW. The National Committee submitted the $3,200,000 budget after programing a $5 million budget. Reductions, using the criteria I mentioned earlier were effected. This was submitted to the Government.

Mr. YATES. To the Government? You mean to the National Science Foundation?

Dr. ODISHAW. Yes.

Mr. YATES. Did you ask the National Science Foundation for $3,200,000?

Dr. ODISHAW. Yes.

Mr. YATES. What happened? Is this the result?

Dr. WATERMAN. This is the result, $2,950,000. That was arrived at in the usual way, by discussing the matters with the Bureau of the Budget.

Mr. YATES. You did not think it should come out of your regular budget?

Dr. WATERMAN. This is still IGY, which has been a special item.

Mr. YATES. You took the $3,200,000 to the National Science Foundation which in turn took it to the Bureau of the Budget?

Dr. WATERMAN. Yes.

Mr. YATES. And the Bureau of the Budget reduced it to $2,025,000?

Dr. WATERMAN. To $2,950,000.

Mr. YATES. I am talking about interdisciplinary research.

Dr. WATERMAN. That particular one, yes.

Mr. YATES. What were the other figures that you submitted to the Bureau of the Budget, the ones Dr. Kaplan has testified to?

Dr. WATERMAN. These are the figures we went to the Bureau of the Budget with.

Mr. YATES. I thought you had originally asked for a total of $5.2 million?

Mr. LUTON. We will have to furnish that for the record, Mr. Chairman.

Mr. YATES. The figures you testified to, Dr. Kaplan, as compared to those which are on the mimeograph sheet appearing at page 10, are as follows: You submitted requests of $650,000 for the observational program; of $525,000 for the World Data Center A; $600,000 for data reduction and publication; $3,200,000 for the special IGY interdisciplinary research; and $280,000 for technical direction, totaling $5,255,000. All these figures were submitted to the Bureau of the Budget and the figures on page 10 are those that were approved by the Bureau of the Budget?

Dr. WATERMAN. Those were recommendations of the National Committee and Mr. Luton can give you the figures arrived at with the Bureau of the Budget.

Mr. YATES. The figures arrived at by the Bureau of the Budget appear at page 10, do they not?

Dr. WATERMAN. Yes.

Mr. YATES. Are you going to come back for more money later, Dr. Kaplan, or has the Bureau of the Budget told you this is all, that you must close up shop?

Dr. KAPLAN. The United States National Committee for the International Geophysical Year expires and certainly we do not intend to come back for the International Geophysical Year.

Mr. YATES. What will happen is that you will have tremendous quantities of data and charts and drafts that you cannot possibly analyze with the funds allowed. Is that right?

Dr. KAPLAN. This interdisciplinary research program would continue for a period of possibly a little less than 2 years after the expiration of the International Geophysical Year, and this request will provide funds for that. Of course there are post IGY plans that will continue. In what form requests for funds for those will come I do not know, but I would imagine they will come in through the National Science Foundation as the National Academy of Sciences and others determine the needs. Certainly the National Committee for the International Geophysical Year as such will not come back.

Mr. YATES. But you anticipate some group will come back for more funds?

IMPORTANCE OF INTERDISCIPLINARY EFFORTS

Dr. KAPLAN. This field will flourish as a result of the International Geophysical Year. It is already flourishing. Those participating in the International Geophysical Year have planned in this Interdisciplinary program some things that should be done immediately for the welfare of the Nation. I anticipate even greater developments in the field of geophysics and I feel that interdisciplinary efforts in other fields of science will be the type of things we will be doing in the future. This program we are proposing will not only serve the immediate needs of the practical problems such as communications, oceanography, and so on, but may be the model for training and research in the specialized fields where you have to bring together many disciplines to arrive at some scientific results. It is in a sense a historic study.

RELATIONSHIP OF INTERDISCIPLINARY RESEARCH TO OBSERVATIONAL PROGRAM

Mr. THOMAS. Mr. Chairman, I wonder if you would be good enough to have Dr. Kaplan prepare for the record and, certainly for my own information, too, take for instance the table on page 40 where you arrive at your breakdown of $2,025,000 for your interdisciplinary research. Stay with it and make a distinction. You have already been granted a certain amount for continuation of the International Geophysical Year's effort at the South Pole.

Dr. WATERMAN. That is a post-IGY observational program. It comes after the close of the International Geophysical Year.

Mr. THOMAS. Is this interdisciplinary research going to be a continuation—this is post, too—is it going to be a continuation of these same scientific efforts? If so, where are they going to take place, and

what connection, if any, does it have with the evaluation of information already obtained? What connection does it have with your data reduction centers? Will this be fieldwork?

Dr. WATERMAN. I can speak to the plans of the National Science Foundation for the future of geophysics that would come out of the International Geophysical Year plan. One has to distinguish, I think, between the observational period of the International Geophysical Year and the programs submitted on that; this research effort is a supplement to that program and, therefore, would be completed, presumably, the major part of it, during the International Geophysical Year itself. The single exception is that we have always said the World Data Center activity should go on beyond that period.

Mr. THOMAS. Where will this work be done? It is going on at existing stations, and it is a continuation of the International Geophysical Year; is it not?

Dr. KAPLAN. This will not be fieldwork.

Mr. THOMAS. It is not going to be fieldwork? Where will it be?

Dr. KAPLAN. It will be interdisciplinary research of an essentially new character.

Mr. THOMAS. Say in X laboratory you will need $60,000 or $75,000 to continue, and this will be a grant from IGY funds. Is there going to be any connection between that and the reduction of information heretofore gained, or will this be more research? You can hardly lay down a hard and fast rule in this particular activity, can you? Suppose Dr. Revelle wants to make a field trip. You cannot say no.

Dr. KAPLAN. I do not think one would categorically say no.

Mr. THOMAS. After all, these scientists are not going to wear anybody's collar. You cannot lay down a hard-and-fast rule or a yardstick. If they want to make a field trip it is all included in this activity; is it not?

Dr. KAPLAN. It is not anticipated that observational programs will be supplemented by this particular interdisciplinary program.

Dr. TUVE. There will be a post-IGY observational program in the Arctic and Antarctic. It is necessary to do additional things in the Arctic and Antarctic before we leave them. This interdisciplinary research does not include observational work that will go on in future years.

Dr. KAPLAN. It is the normal course of any research to start thinking.

Mr. YATES. It is always good to think.

Mr. THOMAS. All I am trying to get in the record is the location where your research work will be done. Under the circumstances you cannot tell where it will be done. Dr. Revelle may not know where he wants to be 6 or 8 months from now.

Dr. REVELLE. I think we can. If you go over the budget you will see there is an item for concluding IGY observational programs in the Arctic and Antarctic, and there is an item for "World data centers," and an item for "Data reduction," which means mechanical handling.

And there is an item for what the United States National Committee for the International Geophysical Year has called "Interdisciplinary research." This means essentially theoretical study which compares the data obtained by all these people, all the various kinds of

new information that we obtained during the International Geophysical Year. We are trying to interrelate those and find out, for example, whether the variations in the amount of hydrogen nuclei coming from the sun have any effect on the lower atmosphere by studying the information obtained during the International Geophysical Year.

I think this money labeled "interdisciplinary research" will all be spent by people sitting at a desk using a computer and making actual chemical and other analyses of the specimens collected.

Mr. YATES. It seems to me the line between IGY and post-IGY is rather tenuous.

Dr. REVELLE. We obviously have a lot more observations to take. The article you saw in the New York Times last week described the currents we discovered in the Pacific. It showed a current of 3,000 miles. We do not know where the water comes from or where it goes. It may go for 6,000 miles. We have to take more observations.

The costs of these observations will not be included in the IGY program, nor in this interdisciplinary research.

Dr. WATERMAN. The table on page 10 illustrates the best breakdown that can be made. The interdisciplinary research would be done by scientists in the laboratory.

With respect to post-IGY observational programs, we would expect that proposals for general research growing out of the International Geophysical Year in geophysics would come to us so that in the future we would plan to consider these along with our other research. We would expect this program to grow as a result of this material. The inception would be like the Antarctic program, because the United States has a definite program there. There, we are serving the interests of such bureaus as the Weather Bureau, the Geodetic Survey, and the Bureau of Standards. General observational research programs following out the theme in the field of geophysics we would expect to handle by straight proposals.

Mr. JONAS. Will the gentleman yield?

Mr. YATES. Yes.

Mr. JONAS. You have anticipated the question I was going to ask. Why do you not begin interdisciplinary research in your general-support-of-science program now without having to have this transition from IGY to post-IGY?

Dr. WATERMAN. The IGY was a program devised under a separate committee.

Mr. JONAS. I can understand why you should have a special program for IGY, but I am speaking of post-IGY.

Dr. WATERMAN. The world data for this additional research would go on during the IGY program, and we would capitalize on it while it exists.

Mr. JONAS. But the data available in the world data centers are supposed to be available for all nations?

Dr. WATERMAN. Yes, and we will capitalize on that mass of data while other observations are still being made by IGY in cooperation with other nations. The IGY observations are things that we must capitalize on now.

Mr. JONAS. I do not see why you cannot capitalize on it in your regular programs.

Dr. WATERMAN. For one reason, the IGY program is still in existence; the international program is still in existence; and there is still this cooperation among nations.

Mr. OSTERTAG. Will the gentleman yield?

When does IGY expire?

Dr. WATERMAN. 1960 is when all phases should be through, but the actual expiration of the IGY observation period is January 1, 1959.

Mr. THOMAS. The legislative committee virtually extended it 18 months in this bill we passed before.

Dr. WATERMAN. On the Antarctic program. That is a United States program after the close of the International Geophysical Year, but for which plans have to be made now in order that the stations may be maintained. That is a United States program, and it does not form a part of the international IGY program.

INTERNATIONAL ASPECTS OF THE PROGRAM

Mr. OSTERTAG. I think it might be well at this point that we have some general picture of the broad international aspects. We are now in the International Geophysical Year, in which, as I understand, a large number of nations are participating. Certain of the projects of the International Geophysical Year are specifically projects of the United States. The Arctic and Antarctic programs are specific projects of the United States?

Dr. KAPLAN. No. The concept of the International Geophysical Year is an examination of the planet in which each nation contributes its part in cooperation with another nation, as we do in the rocket research with Canada. It is a complete look at the world, in which each nation attempts to live up to its responsibilities to make this as meaningful as possible.

Mr. OSTERTAG. But are all the nations participating in the International Geophysical Year involved in these various programs?

Dr. KAPLAN. Not all of them. In the Antarctic program there are a dozen nations, and in the rocketry program perhaps half a dozen nations, with the United States and U. S. S. R. taking the major part, and in the satellite program the United States and U. S. S. R. also take the major part.

Mr. OSTERTAG. But at the end of the International Geophysical Year the several nations will have made their studies and carried on their programs, and that data will be pooled through the world data centers? Is it reasonable to assume that the other nations, including Russia, will be involved in post-IGY activities and go forward as your program does?

Dr. KAPLAN. I would say it is very reasonable. Dr. Bardin's statement, which I read, is an indication of the importance they place on this and the need for the immediate establishment of institutions to take full advantage of the world's store of data which is already becoming available and will become more fully available.

Dr. Revelle, since he has just come back from a meeting in Switzerland on the subject, could speak on the post-IGY plans in the field of oceanography. Dr. Wexler could speak on the Antarctic program.

We have an organization. We have scientists working together and thinking together and, in the whole development of this program, as I am sure the committee recognizes, the United States National Com-

mittee for the International Geophysical Year has attempted to do what they thought was the proper thing for this particular area of interdisciplinary analysis and research, using IGY data.

Mr. OSTERTAG. May I ask you this one last question, please, right on that point: Is it reasonable to say that, if it were not for the post-IGY planning and program, that much would be lost, unless, by virtue of some alteration or transfer, the work was carried on?

In other words you cannot cut it off short. Therefore, certain extensions have to be made.

Is that the general picture of the purpose of the post-IGY study?

Dr. KAPLAN. That certainly is true.

Dr. WATERMAN. But these items that are now before you have an opportunity to get into the international program. The studies that are made may require, for one thing, cooperation with other nations in continuing work while you still have field forces—field forces that can do additional observations to make the interdisciplinary things more effective. My point is, this is necessary still in the IGY program.

Mr. JONAS. Mr. Chairman, may I pursue that one step further?

Mr. YATES. You may, indeed.

QUESTION OF FINANCING PROGRAM THROUGH REGULAR GRANTS

Mr. JONAS. Dr. Waterman, please turn to page 52. You have $210,000 in this proposal for solar activity, and you show how you are going to spend that money. The very first item, for example, involves salaries for 2 junior scientists, 2 man-years, salary of $7,000 per year; secretarial and clerical assistance, 1 man-year, salary of $3,000 per year; and certain travel, printing, and supplies.

What I want to know is, Why would that not be a suitable subject for one of your regular grants?

I am not questioning the importance of doing the work. We cannot waste all the money that we have spent on the International Geophysical Year without trying to capitalize on the knowledge that is available; but I still do not see the necessity of setting up a completely new program which you will call post-IGY and why you cannot merge your regular program into the tail end of the International Geophysical Year and start making grants or assigning topics for research and study to these scientists that you propose to have involved in the work that you say is a part of what we refer to as post-IGY.

Dr. WATERMAN. This could take place at any time. This sort of thing might come to us 10 years from now. The advantage of starting now is——

Mr. JONAS. Sir, I am not raising a question of putting it off. I am simply asking why you cannot make these activities the subject of regular grants from the National Science Foundation.

Dr. WATERMAN. We would if these were individual and uncoordinated proposals and took place after the IGY were completed, or, say, toward the end. The advantage, however, as I see it from our discussions with the National Committee, is to start these things now as a special, directed, research effort. This is, in the first place, fully coordinated with the IGY plans. Out of these studies it may be desirable to alter the national, or even the international, work at the very end of the IGY and afterward. As long as this is in being, and the IGY committee is in existence, any early discovery that comes out of a study like this can influence the observation program at the end of the IGY and in the post-IGY period.

The committee feels that this is important to take up now, and therefore it comes under this head.

Mr. JONAS. Assuming for the purpose of discussion, which I think is not very apt to happen, but assuming that the committee does not approve this money, is not the National Science Foundation in position, and do you not have authority to continue this study through your regular program?

Dr. WATERMAN. We would, but it relates, you see, Mr. Jonas, to the IGY program. It amounts to a directed form of research in the capable hands of Dr. Kaplan and his committee, which can then alter the rest of the IGY program in the light of its findings. As soon as the IGY is over or nearly over, we would expect these proposals to come to us from anyone, without this particular type of IGY coordination. Then we would take those in our regular research budget. But as long as the IGY is in operation, we have the advantage of the National Committee, and as a result of these studies, this could have an effect back on the international, or the national program, so that the further observations might be made or further correlations made. It is that difference in the directed form of research.

Dr. KAPLAN. May Dr. Odishaw add to that?

GENERAL STATEMENTS OF MEMBER SCIENTISTS

Mr. YATES. Just a minute. I would like to put in the record at this point the statements by the eminent scientists who are here, Dr. Wexler, Mr. Shapley, Dr. Revelle—I hope to change that soon, Mr. Shapley—and Dr. Tuve. I think that includes everybody whose statement we have in the record at this point.

(The statements referred to follow:)

STATEMENT OF DR. HARRY WEXLER RELATIVE TO THE IGY ARCTIC AND ANTARCTIC PROGRAMS

I am pleased to have this opportunity to tell you of our programs in the polar regions. The committee has received me most graciously several times in the past few years, and I am most grateful for another opportunity to come before you.

In the budget document which has been submitted to you there is a specific request for funds needed to ensure the successful completion of the Arctic and Antarctic scientific programs. These funds are not requested to finance newly sponsored programs nor to correct original underestimates but reflect increases in program costs impossible to foresee. They are such items as loss and breakage of equipment and parts from air drops at the Antarctic Pole and Byrd Stations, jettisoning of spare parts and equipment by an aircraft unable to land at the Arctic Drifting Station Alpha, and to a great extend by the general upswing in the cost of living, increased salaries, increased travel costs, and increases in replacement parts and expendable equipment costs.

You will notice that with the exception of $7,000 for Arctic oceanography the required funds are needed only by the scientific disciplines of meteorology and glaciology which of necessity have large amounts of scientific equipment, vehicles, etc., and employ large numbers of scientists. The funds indicated in the program for gravity and seismology observations are really part of the overall glaciology program, as they will be used primarily during the glaciology traverse operation.

PRELIMINARY IGY FINDINGS

Before turning to a discussion of the budget request, I should like to give a brief account of a few of the preliminary findings these disciplines have already made which, I hope, will indicate to you the importance of completing the planned programs and the substantial scientific advantages we can expect these additional funds to provide.

At the international Weather Central at Little America, maintained by the United States at the request of other countries, Argentine, Soviet, and United Sates meteorologists jointly studied the main features of the Antarctic atmospheric circulation. They found deep cyclones prevailing in the Ross and Weddell Seas and an anticyclone, not of the shallow glacial type, but frequently extending upward to the lower stratosphere, located over the 12,000-foot-high ice plateau of East Antarctica. IGY observations collected at Little America, near a station first occupied by Amundsen in 1911–12, and later by three Byrd expeditions, have for the first time in Antarctica revealed a significant warming trend of about 5° in annual mean temperature or less than one-half of the warming trend observed in the Spitzbergen-Greenland portion of the Arctic during the same period. Also at Little America, the regular meteorological program was augmented by special observations of ozone content of the surface air which was recorded continuously by a chemical device designed by the University of New Mexico, and to everyone's surprise revealed values in winter 25 to 30 percent higher than in New Mexico. Since ozone is manufactured naturally only in the sunlit portion of the lower stratosphere, this means that there must be an infiltration of air to Little America from the north, probably at heights of 10 to 15 miles. Now meteorologists must find out how this is done. The carbon dioxide content was recorded continuously and showed a normal value of about 312 parts per million. This value differs from earlier observations taken at Little America which indicated that the carbon dioxide concentration there was several percent lower than elsewhere.

At the South Pole the meterologists knew it would be cold, especially at this 9,200-foot elevation and were not surprised by the −59° F. annual average temperature nor by the −102.1° F. minimum temperature, but were astonished to find a consistently strong breeze of 10 to 20 miles per hour accompanying these low temperatures. Also the micrometeorological program at the South Pole revealed that the snow reflects 94 percent of the incident radiation.

On the ice floe Drifting Station Alpha, in the Arctic Basin, a full-scale meteorological program has been in operation during the IGY. Data gathered from this heretofore inaccessible location has proved most valuable not only from the vantage point of basic meteorological science, but also in the practical development of weather forecasts. Observations from this station and from aircraft have demonstrated that the climatic environment over the Arctic Basin is entirely different from that over the continental margin.

UNITED STATES IGY TRAVERSES

Three major oversnow traverses were undertaken this past season and all were highly successful. These parties normally consist of 6 scientists, completely equipped, using 3 Tucker Sno-Cats, each hauling a 2½-ton sled. They traveled over a total of 4,000 miles. We hope to at least match the record in the forthcoming season.

The traverse from Little America found that the Ross ice shelf, which has an area of some 160,000 square miles or about the size of California, actually floats but is grounded at Roosevelt Island and probably at other shallow areas. The ice thickness varies from 800 to 1,000 feet and the ocean floor beneath the ice varies from 2,000 to 2,600 feet below the ice surface. The barrier or edge of the ice shelf moves seaward at a rate of approximately 5 feet per day.

One hundred miles east of Byrd Station ice 14,000 feet thick was found resting on a rock bed 8,200 feet below sea level. This is believed to be the thickest ice layer measured anywhere in the world. On this traverse fresh penguin tracks were found at a distance of over 150 miles from the nearest coastline. It has generally been accepted that penguins do not stray far from the seacoast. Does this discovery indicate the near presence of water far inland on the Antarctic Continent?

Also at the Byrd Station, where the ice is 10,000 feet thick and extends 5,000 feet below sea level, 4-inch cores have been obtained to a depth of 1,000 feet, at which level the ice is estimated to be a thousand years old. Below a temperature maximum found at a depth of 150 feet, the temperature decreases about 2° F. to the bottom of the hole, indicating perhaps a cold residual of the last ice age. The cores taken at various depths will be subjected to physical, chemical, and radiochemical analyses to determine age, crystal structure, and air temperature at the time of formation of the precipitation. Pollen and volcanic examinations will be made for age determinations. Snow density, grain, and crystal sizes will be measured.

The traverse from Ellsworth Station collected rock specimens from a newly discovered mountain range. Black stratified bands were noted high on the top of the mountains and a 5,000-foot escarpment was discovered on the southern side. Evidence of mineralization was present as abundant green malachite stains. Some of the bright green stains were visible at 100 yards. No definite ore materials of commercial value were identified in the field. Altogether 400 pounds of rock were collected for thin section study and laboratory analysis. It is also most interesting to note that scientists on this traverse found living algae in summer melt-water pools at a latitude of about 82° south.

Under the ice shelf a deep trough was detected extending inland from the vicinity of 35 miles east of Ellsworth Station. It seems a division of the Antarctic to the east and west on the basis of topography would most logically follow the axis of the trough. Further work is necessary before it can be determined whether this trough extends all the way from the Weddell Sea to the deep ocean basin discovered in Marie Byrd Land then to the Ross Sea.

This very brief account of finds, of course, does not even suggest the results expected when the full volume of the IGY data is consolidated with similar data from other countries in Antarctica. For the first time in history, we can hope to approach an understanding of these fundamental scientific phenomena of the continent—many of which, I am sure, will contain profound practical applications to our global understanding of the heat and water budget of the earth.

In meteorology, five full-scale weather stations, plus the International Weather Central, are maintained in the Antarctic. Twenty-seven full-time meteorologists are now employed at these stations. Additional funds in the amount of $103,000 are needed to complete this program. In the Arctic $30,500 is required to continue the meteorology program on Drifting Station Alpha.

In glaciology, programs are carried out at all six IGY Antarctic stations in addition to the over-snow traverse operations. A total of 26 scientists are now employed. Additional funds in the amount of $35,000 are needed for the traverses and $114,000 for station glaciology programs. A detailed breakdown of these funds is included in the budget document.

In oceanography a total of $7,000 is needed by the tide gage and physical oceanography station at Point Barrow. First-year results have emphasized the importance of completing this program.

As I have said, these funds are needed, not for new programs, but to take care of unavoidable losses of equipment and supplies associated with scientific operations in this most inhospitable environment, for the associated increased costs of replacements, and for related salary expenses. I am sure that you can appreciate our strong desire to carry these programs through successfully; we have a fundamental responsibility to fulfill international scientific commitments as, for instance, in carrying out the work of the Weather Central. In addition, we have a unique opportunity to capitalize on all of the facilities and programs which are already available. Our scientific plans have been laid, all of the major facilities and personnel are available, and our objectives have been carefully scrutinized to assure the maximum scientific advantage of the programs which are already in operation. Thus, these funds are critically needed to capitalize on preliminary findings and programs which promise to be among the most important of all of the scientific work now in progress in the polar regions. I earnestly urge your favorable consideration of this request.

Statement of Alan H. Shapley

The special IGY research proposal relating to the upper atmosphere and the sun

It is a pleasure to point out the opportunities for full exploitation of the high-atmosphere data which have been collected over such extensive regions of the earth during the IGY. The gathering of new and useful upper atmosphere data which was scheduled has been most successful because of the considerably broadened coverage of observations as the IGY got underway.

There is now at hand an extensive body of high atmospheric and solar data covering the most active solar period within recorded scientific history. It is of the greatest importance that full use be made of the present opportunity to analyze the results gathered in order to fully comprehend the effect of the sun on events in the terrestrial atmosphere.

SOLAR RADIATIONS AND AURORAS

The sun ejects particles which travel earthward; it also may affect the passage of other earth-bound particles. The sun is the source of invisible light energy which fills the space outside the terrestrial atmosphere. At the surface of the earth itself, the phenomena which occur in response to these stimuli are manifested in auroral displays, in ionospheric behavior, in high altitude cosmic ray changes, and in fluctuations of the geomagnetic field. It is well known that auroras must be produced by the arrival of charged particles—protons and electrons from the sun. They approach the earth and impart energy to atmospheric molecules, which, in turn, emit colored visible light (the auroral display). Auroras tend to occur after outstanding solar disturbances, yet the prediction of auroras based on specific solar observations has proved to be very far from perfect.

As the charged solar particles responsible for auroras enter the earth's atmosphere they are deflected by the earth's magnetic field toward the polar regions. But whether they arrive in discrete streams, or clouds, or whether an almost constant flow occurs is not known. The actual auroral displays are diverse but may be characterized as commencing with a quiet display, such as a homogeneous arc. Typically, this is followed by the appearance of active rayed forms which ultimately break up into fluctuating patches of light. These phases are not yet identified with correspondingly different mechanisms of an auroral theory which must be confirmed or denied.

It has been proposed that the arcs may be associated with proton entry while the rays are caused by the arrival of electrons. But there are difficulties with these suggestions, and in any event the distribution of light along the arcs and rays is so far not explained or understood. Moreover, there are always the exceptions to the general behavior which must be interpreted. One wonders, for example, why homogeneous auroral arcs have sometimes been observed to be oriented in the north-south direction at Wilkes Station in the Antarctic whereas elsewhere they are usually lined up in an east-west direction.

One could cite other imponderables of auroral theory, but these serve well enough to point up the nature and purposes of the IGY auroral program. The observational phase is nearly two-thirds finished. It is providing the essential information upon which theoretical and interpretive analyses can be based to answer some of the questions which have been propounded above.

Airglow consists of light emitted from atmospheric molecules, but unlike the aurora is observed over the whole face of the earth. Its cause is not known, and only now are sufficient data becoming available to conduct a useful analysis of its geographic and temporal variability. The influence of geographical location on the airglow emission will be investigated, and comparison of these latitudinal effects with geographical influences on other geophysical phenomena will be made.

COSMIC RAYS

Cosmic ray physicists have made a number of interesting discoveries during the IGY which will have to be interpreted in terms of the environment through which the earth moves. Cosmic rays are extremely energetic charged particles, mostly protons and electrons, which probably originate almost entirely outside the solar system. Their intensities undergo a variety of fluctuations; a particularly notable example are the decreases in intensity which are usually observed to occur in conjunction with geomagnetic disturbances. A definitive mechanism in explanation of this behavior is still being sought although the phenomenon is a common one. It is probable that the decreases have their origin in the effect of changing magnetic fields close to the earth, which influence the arrival of charged particles. Nevertheless, no suggestion has yet been made to explain why the decreases are associated with only some of the magnetic disturbances. IGY ballon observations have established the fact that, during this period of high solar activity, the low energy cosmic ray particles do not approach the earth even along paths where the terrestrial magnetic field permits entry with ease—in the polar regions. Moreover, synoptic cosmic ray observations on shipboard and by airplane demonstrate that the magnetic fields surrounding the earth are quite different from surface magnetic field measurements. Although there is a theoretical explanation of this result, many of the details of the mechanism remain to be delineated.

In still other investigations, cosmic ray scientists have discovered that in the auroral zones X-rays occur in the high atmosphere during periods of magnetic or

auroral disturbance. These are probably caused by electrons which bombard the atmosphere, but the sequence of events is difficult to understand. The time lapse following solar disturbances is many times greater than would be required for the electrons to make the trip to the atmosphere from the sun. Again, only tentative explanations are available. One could cite other problems worthy of investigation which have arisen from IGY cosmic ray observations, but it is sufficient to note as a last example the quite unexpected discovery of high energy electrons present at altitudes greater than 600 miles as deduced from satellite observations. The relationship of the origin of these to those discovered at the lower altitudes in polar regions during geomagnetic or auroral disturbances is a most interesting theoretical problem.

IONOSPHERIC PHYSICS

Investigations in the field of ionspheric physics are more truly synoptic during the IGY than at any time in the past. An extensive network or radio sounding stations is probing the ionosphere to discover the seasonal, diurnal, and disturbed synoptic characteristics of the ionic layers of the atmosphere. The theory of interpretation of these records in terms of actual electron densities as a function of altitude is just coming into full fruition during the IGY. It now becomes feasible to consider the physical mechanisms by which the ionospheric layer movements are to be correlated with other geophysical phenomena; the drift and fluctuation of the airglow light emitted in the upper atmosphere and the solar related fadeouts and polar blackouts of radio ionospheric echoes. The reduction of sounding records to density profiles has already shown that the F layer of the ionosphere undergoes a pronounced pinching so that it changes from a thick daytime layer to a very thin one at night.

The active investigation of whistlers has demonstrated the existence of appreciable densities at distances of as much as several earth radii away from the earth. There is indication that these regions have a fibrous structure—a suggestion of some importance in interpreting the nature of the electrical conditions in the outer atmosphere. Again, it should be said that these tentative interpretations can only be developed by continued reference to the expanding body of IGY data and corresponding amplification of the theory.

THE EARTH'S MAGNETIC FIELD

The principal component of the earth's magnetic field does not fluctuate, but superimposed upon it are many variations whose correlation with different solar characteristics, with ionospheric disturbed conditions, with cosmic ray fluctuations, and with auroral zone soft X-radiation are being investigated. These superimposed geomagnetic fluctuations are indicative of the currents which exist in the ionosphere. Particularly intense magnetic currents have been found following paths which circle the poles and the Equator. More accurate specifications of the relation of the equatorial current to the geomagnetic Equator has already been accomplished during the IGY.

Periods of special activity on the sun will be analyzed to establish the time intervals between sunspot activity, ultraviolet, radio, and X-ray emissions; to relate those events to geomagnetic effects and to their terrestrial occurrences. Projects in the field of solar activity in the budget before you are aimed toward interpreting the result of the sun's activity on the earth.

By interpretation of data from the north-south and east-west magnetic station chains, it is hoped to establish the mechanisms responsible for the electrical currents in the atmosphere. Analyses of the records of magnetic field fluctuations will be carried out in the endeavor to study magnetic storms and determine their causes.

INTERDISCIPLINARY RELATIONS

A number of cross-field correlations involving geomagnetic data have been cited; from the above general description it is clear that solar effects are of central importance in understanding this area of geophysics. Consequently, solar correlation studies will be the object of even more endeavor than those for geomagnetism. The solar data are being made available in very compact form for each of the days of the IGY and will be published for the reference of all those engaged in using correlation techniques. Nothing better illustrates the interdisciplinary approach which has been the hallmark of IGY planning

and which can be found implicitly stated in almost every one of the projects described in the IGY supplemental budget document. The frequent use of the word "correlation" with other geophysical phenomena will be noted. To fulfill the promise of an integrated picture of the processes active in upper atmospheric phenomena, it is most essential that the coordinated program described in this presentation be undertaken.

Details of specially designed and selected research projects in the fields of solar activity, aurora and airglow, geomagnetism, ionospheric physics, cosmic rays, and rocket research are given in the budget document before you. I should like to make only a few remarks about each discipline in terms of getting underway rapidly some special projects to capitalize fully on our opportunities. If we can put this program into effect we will shape the course of geophysical research for many years. The few crucial insights we hope to gain through these interdisciplinary studies will result in gains far transcending their immediate value, for they will make so much more valuable the years of research and study that will be devoted to IGY data in the natural course of geophysical research.

Solar activity

The sun is the chief protagonist in the study of the upper atmosphere. The ionozing solar radiations are the chief causative factor in creating the ionospheric regions, geomagnetic disturbances, auroras, etc. We need to know what these radiations are in terms of their energy, place in the electromagnetic spectrum, and variability. We must also direct attention to mechanisms on the sun responsible for great outbursts of energetic radiation, as the sun affords our only opportunity to study closeup a typical star of the universe.

Aurora and airglow

Study of the auroral displays, their growth, movement, radiations, and decay, will not only tell us much about electrical occurrences in the high atmosphere but enable us to study indirectly the streams of incoming solar radiations responsible for the auroras. Airglow is a phenomenon which has obscure origins, but the solution of the generation of airglow excitation and the movement of airglow patches will supply unique information on dynamic characteristics of high atmosphere air masses, and may provide information on unsuspected incoming radiations. Auroral and airglow studies are closely related to ionospheric physics as they provide a different avenue of approach, a different but related set of phenomena to study.

Geomagnetism

The ionizing solar radiations in their interaction with gas atoms and molecules of the upper atmosphere create electrically charged air masses. As these air masses move in the dynamic high atmosphere they constitute electrical currents. The earth's magnetic field therefore plays a very important role in modifying and controlling movements of electrified gas; conversely the movements of such gas can be detected at the earth's surface as small but distinct disturbances of the earth's steady field. Geomagnetism is one of the unifying factors of the study of the high atmosphere. It is both a prime factor itself as well as a distinctly different source of information on high atmosphere behavior.

Ionospheric physics

Ionospheric physics is the study of the electrical nature of the high atmosphere using radio techniques. It began at the turn of the 20th century with the discovery of long-range radio propagation. In recent years we have added to our knowledge by developing new methods for probing the ionosphere from below with man-made radio signals, or naturally occurring radio signals from low level phenomena such as lightning strokes. We have also learned how to use radio signals from space: the sun, our own galaxy and the cosmos. These signals penetrating through the entire terrestrial atmosphere have added a new dimension. Recent theoretical suggestions have also provided us with an exciting application of signals produced low in the atmosphere from lightning discharges to study of ionized material far out into space. These signals, called whistlers, were discovered many years ago but we have only just now learned to use them as scientific probes.

Cosmic rays

The study of cosmic rays is a part of our basic study of the particles and structure of the universe. However, because they are charged and interact

with the magnetic field of the earth, and with atoms in the atmosphere, we can use them as geophysical probes. The sun as a typical star is a source of cosmic rays and we can thus study some of these fantastically energetic particles shortly after they are born. Cosmic rays from more distant sources can tell us about how the sun itself, by throwing off great clouds of solar material, creates electrical and magnetic irregularities in space in the vicinity of our own solar system.

Rocket research

Rockets carry instruments into the upper atmosphere and provide means for studying directly the interactions of solar radiations and the atmosphere, and the electrical results of such interactions. Rockets also enable us to study directly the solar radiations which do not penetrate to the ground. Finally, rocket carried instruments enable us to calibrate directly the ground based indirect observations of the upper atmosphere.

THE PHYSICS OF THE UPPER ATMOSPHERE

The complete study of the upper atmosphere is essential to our understanding the full effect of solar radiation on the earth and the nature of inner space. The IGY is adding immeasurably to our firsthand description of events in this region. Recent theoretical progress, and the achievement of instrumented earth satellites promise to allow many breakthroughs. Some of the IGY discoveries this far have altered thinking and have suggested new avenues to explore. IGY data will provide material for the world's scientific community for perhaps decades but we are on the brink of attaining some critical progress in understanding the relations between the high reaches of our terrestrial atmosphere, the sun, and space. We need, however, to push the work in these few key areas in addition to the regular geophysical efforts in these interdisciplinary subjects. These crucial understandings will be hard-won, but of inestimable value to progressing and continuing geophysical study.

Statement of Dr. Merle A. Tuve

THE SPECIAL IGY RESEARCH PROGRAM IN THE EARTH SCIENCES

It gives me great pleasure to appear before this committee to discuss the progress that has been made in the International Geophysical Year, especially in the study of the interior of the earth.

SEISMIC SOUNDINGS

One of the most exciting and unexpected results from the IGY investigations was the discovery of the great thickness of ice in Antarctica as determined by seismic traverse parties from the stations at Byrd, Little America, and Ellsworth. The Antarctic continent was once thought to be a lofty land mass. We now know that if the ice sheet were quickly removed, the Pole Station, presently at elevations of some 9,000 feet would be only a few hundred feet above sea level, while Byrd Station and much of Marie Byrd land would be submerged to depths approaching 5,000 feet. It is even questioned whether the Antarctic land mass is continuous. Our interpretation of the geography of Antarctica is being revised by the results of IGY exploration.

The Antarctic ice sheet behaves to some extent as a shield to the seismic waves from explosions, obscuring the structure of the underlying rocks. The principal result of the seismic traverses in the Antarctic is to learn the thickness of the ice itself. Nevertheless, it is also highly important to extract from the seismic records whatever information can be gained as to the topography and geology of the underlying rocks. A coordinated study of the seismic records from the oversnow traverses and the records from the stations' seismographs, which have been operated in four of the Antarctic stations (Byrd, Pole, Wilkes and Cape Adare), will give new information concerning the earth's crust and mantle, especially for the South Pacific area.

EXPLOSION AND STATION SEISMOLOGY

The need for coordination of studies in explosion and station seismology is pointed up by recent work in California. Crustal structure has been studied

intensively for 30 years by one of the best network of seismograph stations in the world. The same structure has been studied by explosion techniques for 20 years—intensively for the past 10 years. The remarkable fact was that the results from these two techniques differed markedly. First, the method of interpretation of the earthquake records was revised; second, a very special and precise explosion survey was made. The results of these years of study, which have just come to fruition within the last few months, were announced by Dr. Frank Press, member of the IGY Technical Panel on Seismology, at the recent meeting of the American Geophysical Union. Utilizing the results of the work in California, we shall be able to attack the problem of crustal thickness in other areas where both earthquake and explosion seismic data are available.

Seismologists wish to learn, from the study of earthquakes, two things which cannot be learned from explosion studies; the structure of the deep interior below the crust, and the nature and mechanism of the forces which cause earthquakes. This latter point is the more elusive, yet the answer to this question is of great consequence to mankind and at the same time is basic to the study of geology and seismology. Earthquakes have been studied systematically for half a century: The regions in which earthquakes frequently occur is now well defined. In the United States, much attention has been focused on California, where crustal movement along the San Andreas fault caused the famous earthquake and resultant fire in San Francisco in 1906, and where several potentially disastrous earthquakes occur each year.

EARTH STRESS AND STRAIN

In addition to ordinary seismometers, seismic-strain gages called extensometers have been installed for several years in California. These instruments are quartz rods some 82 feet in length whose ends are bolted to rock in tunnels. Distortions in the rock such that the length of the rod is changed by one-millionth of an inch are recorded. During IGY, two such instruments were installed in the Andes. The nature of the strain which this great mountain range is now undergoing can be learned directly from the extensometer records.

The seismicity of this region is being further studied by long-period seismographs located at Santiago, Chile, one of the IGY network of 10 such stations. In addition, last summer an expedition from the Carnegie Institution of Washington made observations of explosions in the open-pit mines of northern Chile and Peru. From this work has come some understanding of the complexity of the crustal structure which supports the high Andes Mountains. Scientists intimately concerned with these studies are now available and anxious to analyze the data obtained in order to understand the structure of the Andes to relate this information to other parts of the world. The Andes Mountains are much loftier than any mountains in North America, and are visited by more frequent and more intense earthquakes. For this reason, this area is more suited to the study and eventual understanding of the forces which cause earthquakes. This is part of the problem which we are attempting to solve. If we can succeed, the knowledge so gained will be directly applicable to those parts of our own country which experiences less violent, but, nevertheless, disastrous earthquakes.

EARTHQUAKE PREDICTION

A new approach to the prediction of earthquakes has been made public within the past month. The method attempts to relate the occurrence of major earthquakes to the change in frequency and amplitude of microseisms. The idea is completely new, and may be important. The assemblage of IGY microseismic and earthquake data is ideally suited to the correlation study which will have to be made to test the suggested relation between abrupt changes in the character of microseisms and the occurrence of a major earthquake.

In the budget before you, additional funds are requested for a special study of the results of the IGY program in seismology. The United States program for the IGY has installed standard-station seismographs in four Antarctic stations, and has undertaken seismic traverses in hitherto unexplored regions in Antarctica and in the Andes. On the long-period seismograph, we have discovered earthquake waves of period previously not recorded. On the extensometer, we are measuring the strain in the Andes by a technique previously used in only one place. From Antarctica we have obtained seismic records from explosions and from earthquakes giving us information about the structure of an immense region in which we previously had no seismic data at all.

These data are all new. The funds requested for this special research program on seismic records will permit a correlated study to be started now. Immediate attack on existing data will make apparent whether we are exploiting the present facilities to the optimum.

EARTH'S SHAPE AND PULL

Geophysicists are now studying, also, the figure of the earth and the distribution of mass in the earth's crust by means of gravimeters and pendulums. That the earth is spherical is well known; that the poles are flattened, bringing them 13 miles nearer to the center of the earth than the Equator, is also well known. Further details of the shape of the earth are studied by the techniques of gravity. Knowledge of these details is fundamental to the study of the earth, and is necessary for the precise determination of geographic position.

Mountain ranges are thought to be essentially floating in the manner of icebergs. The degree to which this equilibrium is achieved can be determined from gravity studies. Such determinations have been made in many localities on the continents, and at a few localities in the two-thirds of the world which is covered by ocean.

A breakthrough in this field has developed during the IGY. A gravimeter that can be operated from a surface ship has been developed. All previous gravity measurements at sea had been made on submarines. The total number of such stations for the past 30 years is approximately 5,000. This new gravimeter was first tested by duplicating a series of measurements made in a submarine 10 years ago. The time required to take the measurements on the surface was 9 hours; in the submarine, 2 days. The time required to reduce the data was half a day, compared with 2 weeks for the submarine data. With this instrument, gravity measurements are being taken in volume and over an area never before possible. The observations taken at sea, studied in conjunction with the observations taken from land, will let us develop a complete picture of the force of gravity and the distribution of mass around the world.

LAND TIDES

Earth-tide observations are being made with stationary gravimeters of unusual sensitivity. These instruments measure a change in the force of gravity of one-billionth part. The daily earth tide which is recorded on these instruments as a change in gravity is also recorded on the seismic-strain gage as a minute distortion of the earth's crust. Coordinated analysis of these two types of measurements will yield information on the strength and structure of the earth.

In addition to the gravity studies made by gravimeters and pendulums, calculations of the orbits of earth satellites can yield values of gravity which relate to distortions in the figure of the earth. Greater accuracy in the determination of the shape of the earth will yield greater precision in the determination of geographic positions.

There are funds in the budget now before you for an immediate, short-term research of new data in gravity which are now available from three essentially different techniques: (i) Gravimeter and pendulum, including the new sea-surface gravimeter; (ii) earth-tide studies and their relation to earth strain; (iii) satellite orbital computations. From these data we can endeavor to learn new facts about the shape and internal constitution of the earth. These facts are of basic importance to geophysics; they will have direct application to human activities.

In the proposal before you, as part of the special, intensive, and short-term IGY research program, there are eight projects. This small group of projects, however, has a significance many times its number. It is a key, and minimum, group of investigations that will permit us promptly to exploit current observations. This will permit us to pave the way to the future, both experimentally and theoretically. It affords the hope of major new insights.

Five of these projects relate to seismology. Three of them relate to gravity. They are described in the program and budget document before you. To the description there, and to my remarks above, I can only add this: In my opinion, this special IGY research effort is crucial to IGY, crucial to scientific progress, and most important as a basis for further departures.

Statement of Dr. Roger R. Revelle

THE SPECIAL IGY RESEARCH PROGRAM IN METEOROLOGY, OCEANOGRAPHY, AND GLACIOLOGY

I am very honored to be able to appear before this committee again and talk to you about how we should like to use the vast amount of data and information now being collected by the world's geophysical community during the International Geophysical Year. We think that this great effort is turning out to be more successful and significant than we could possibly have anticipated. The quality and quantity of the data is exciting all scientists associated with the program. Some of the initial discoveries that have already been made are significant in themselves. And yet, and this is a point which is easily overlooked in the excitement over fresh data and discoveries, these initial discoveries are only part of the scientific wealth contained in the data of such an endeavor as the International Geophysical Year.

SOLAR ENERGY AND CIRCULATION OF THE ATMOSPHERE AND OCEANS

I should like to tell you briefly of the heat and water budget of the earth in terms of the IGY, and what we hope to learn from the observations. As you know, the sun supplies almost all the energy received by the earth. In the part of the solar spectrum of importance to us in this discussion (that is, the visible light and heat radiation), the sun is remarkably constant, in contrast to the solar ultraviolet and X-radiation, the fluctuations of which cause the great ionospheric disturbances and magnetic storms. The earth intercepts from the sun radiation of light and heat at a rate of about 200 million million horsepower. This energy warms the land and air, makes life possible, and drives the winds of the atmosphere and the currents of the oceans.

We know that more energy is received by the equatorial regions than can be reradiated from there back to space; the converse is true in the polar regions. And yet neither the Tropics nor the Arctic or Antarctic, nor the entire earth change appreciably in average temperature from one year to the next. How does this excess energy get from the Tropics to the poles? We think that the atmosphere and oceans carry it in the form of winds and ocean currents. But the picture is far from simple. The earth rotates, giving a twist to any northward or southward moving air or ocean current. Great mountain ranges, on the continents or rising from the sea floor, deflect air and ocean currents which are also channeled by the boundaries of the oceans—the continents.

We know that in the oceans cold dense water is formed in the polar regions. This water sinks to the bottom and flows away, displacing other water which flows toward the Equator. Above the bottom water are several layers of deep water. Some of the bottom water gets trapped in great basins; some bottom and deep water flows along the ocean floor. We know very little about the circulation of bottom and deep water from polar regions to the Equator and back, or whether there is an exchange between deep water of Arctic and Antarctic origin. Great wind systems blowing along the surface of the ocean result in surface currents such as the Gulf Stream. Water flows between oceans, and there are differences in water levels between the Atlantic and Pacific Oceans that are not understood yet. Some seas are saltier, and hence their water is more dense than others, which, draining into other water areas, sets up current systems. Undersea topography is very rough, far more so than the land features. There are mountain ranges and canyons in the sea floor which completely dwarf the Andes, Himalayas, and the Grand Canyon.

IMPORTANT MINOR CONSTITUENTS

In the oceans, minor constituents like salt, oxygen, and other dissolved chemicals help us trace water masses and deduce currents. In the atmosphere, we also apply this tracer technique, but, more important, the minor constituents may affect the circulation in an important way, as they are capable of storing much energy. The most important minor constitutents of the atmosphere are water vapor, ozone, and carbon dioxide, because they absorb and reradiate heat and energy and produce a greenhouse effect, which may have important long-term climatic importance.

In the atmosphere, water vapor is also a great storehouse of energy. Every quart of water transformed into vapor at the surface of a puddle, lake, or sea requires one-half million calories of energy; all of that energy is freed when that quart of water condenses to form clouds or rain.

It is estimated that, on the average, 100 million million tons of water vapor are in the atmosphere, storing 5,000 billion billion calories of energy. When the vapor condenses to form droplets, this energy is available to drive the winds of the atmosphere. Water vapor is not constant, however, throughout the atmosphere: Evaporation depends on cloud cover and surface temperature; surface temperature depends on season and cloud cover; and cloud cover is affected by the kind of air that is available, whether dry and warm, moist and warm, or moist and cool, and what kind of air is encountered. A warm moist air mass, for example, contacting a cold front, results in condensation of great quantities of water vapor and a resultant release of energy with consequent squalls and storms. Even this is a very simplified picture. We just do not know yet exactly what are all the factors involved and what their interrelationships are.

RELATION OF ICE TO CIRCULATION

I have discussed some of the ways in which liquid water and water vapor are important, but I have not yet mentioned water in its third state—ice. We know that great deposits of ice, the Greenland and Antarctic ice sheets, and the Arctic ice pack, are important factors in local circulation. This is partly a result of cooling effects on the atmosphere and partly a result of the radiation balance in these areas, where most of the energy in the visible portion of the spectrum is reflected, but some may be trapped in the lower atmosphere by cloud cover.

IMPORTANT INFORMATION STORED IN GLACIERS

In addition to the short-term effects large ice masses have on local climate, the glaciers and ice sheets are an index to recent and ancient climatic fluctuation. As tree rings can be interpreted by an expert, so can annual accumulation layers in ice be studied to give important information on rates of deposition of snow in past years. The ice also traps dust, pollens, spores, and other materials drifting down through the atomsphere, as well as naturally occurring radioactive isotopes formed high in the atmosphere by cosmic ray impacts. These latter trace elements may yield valuable information on past fluctuations of cosmic ray intensity. Recent layers contain newly produced radioactive isotopes, whose concentrations in terms of known nuclear testing give information on atmospheric circulation patterns and possibly on storage mechanisms in the very high atmosphere.

INTERRELATED STUDY OF ATMOSPHERE, OCEANS, AND ICE

The observational program of the IGY was designed to collect carefully planned data bearing on the many aspects of atmospheric and oceanic circulation, energy relationships between solar radiation, glacial ice, sea, atmosphere, and land, and to try to collect as much information as possible relating to climatic trends and especially past climatic conditions. As a consequence of the IGY observing program, we will have the most complete day-to-day description ever obtained of the temperatures, pressures, and humidities in the atmosphere from almost all over the globe, from the surface to heights of almost 20 miles. We are also mapping some of the great ocean currents from the surface to depths of 4 to 7 miles, and we are determining the real extent and volume of the world's ice locked up in glaciers, as well as determining how the local climate affects the glaciers and vice versa. Besides turning up new facts and discoveries which are important in themselves, this information has an even more important application: the study of the interrelationships between various disciplines, as exemplified in the project proposed in the budget before you.

Special projects in meteorology

Nine special projects are proposed in meteorology, stimulated by the early IGY discoveries and the availability of data never before accessible to meteorologists:

(i) IGY high altitude radiosonde and rocket data would be used to study anomalous stratospheric warming. Relationships would be sought between the warming and high altitude jet streams, distribution of ozone, and solar and magnetic effects.

(ii) Data from ozone stations, CO_2 sampling stations, and continuous recording of CO_2 concentration at Little America, Mauna Loa, and on board oceanographic ships would be prepared on charts and analyzed with other IGY data concerning atmospheric circulation. Relations between circulation systems and changes and concentrations of these important minor atmospheric constituents would be sought.

(iii) Worldwide IGY data from radiosonde stations would be studied in an attempt to calculate the exchange of energy between the troposphere and stratosphere and to find out how stratospheric effects can influence and modulate tropospheric circulation.

(iv) Data from polar stations on solar and terrestrial radiation, and temperatures of the surface and interior of snow and ice would be studied in an attempt to determine how much and by what mechanisms energy is transferred between surface and atmosphere in these regions.

(v) Data from very sensitive recording microbarographs at IGY island stations would be analized to study how energy is transferred between the ocean surface, in the form of waves, and the atmosphere, from explosion or violent storms, tidal motions, and pressure changes.

(vi) In an attempt to study the total heat balance of the atmosphere and to determine the relation between storm systems and the energy reflected by the earth, data from special satellite experiments, including observations of reflected earth light illuminating the "dark" crescent of the moon, along with data from the IGY solar radiation network, would be analyzed. We only know that on the average the radiation balance of the earth is in equilibrium with the energy received from the sun and that lost to space; we know very little about short-term variation that may provide a key to circulation fluctuations.

(vii) Antarctic data in meteorology and oceanography as well as the distribution of sea ice would be applied to an explanation and delineation of the Antarctic Circumpolar Current and various zones of oceanic divergence and convergence. In the Antarctic the relation between atmospheric and oceanographic circulation is of especial importance in understanding both the meteorology and oceanography of the region.

(viii) Meteorological data during times of sudden, large temperature rises, stratospheric circulation changes, ozone concentration anomalies, and other such events, would be studied with a view to finding solar or cosmic influences on the lower atmosphere. Mechanisms would be sought whereby energy received at high levels in the atmosphere—for example, at the ionosphere—could be transported to lower levels.

(ix) Satellite orbit data would be analyzed in order to compute densities in the region beyond the reach of rockets or direct measuring instrumentation.

Special projects in oceanography

The major emphasis of the IGY oceanographic program on broad-scale investigation with unparalleled coverage in oceanic areas make it possible to undertake special projects with high promise of provinding new insight into our understanding of the oceans. Six projects are proposed to take advantage of the availability of IGY data:

(i) Processed data (temperature, chlorinity, and oxygen concentration) from IGY deep hydrographic casts and direct observation of currents in surface and intermediate deep waters, would be utilized to plot oceanic current systems. Data from other special projects (dating by tritium and carbon 14, for example) could be applied to mapping the oceanic currents.

(ii) Mean monthly tide values from IGY island observatory stations, along with temperature and salinity observations to correct for density changes, would be used to calculate the water budget of the oceans. The seasonal mass loss or gain in each hemisphere and the exchange of water between hemispheres could be determined with a far greater reliability than we now have.

(iii) Water samples, ranging from a few ounces to 50 gallons, from deep, intermediate, and surface waters, and from all major water masses of the world would be analyzed for tritium, carbon 14, strontium 90, and other radioactive isotopes, to identify and date water masses. This would lead to invaluable information relating to oceanic circulation. Carbon dioxide concentrations in air and sea water would be studied as part of our attempt to obtain a reliable assay of CO_2 concentration.

(iv) Hundreds of ocean sediment cores and bottom samples have been obtained on IGY cruises. These samples would be analyzed for information on past climatic oceanic history, rate of deposition of sediments, age of sediments,

and the geochemistry of the trace elements in sea water as they relate to biological and geophysical processes.

(v) Data on circulation, temperature, ice budget, water characteristics, and topography of the Arctic Basin waters and sea floor would be studied. The heat and water budget of the Arctic Ocean is intimately related to that of the North Atlantic and, to a lesser extent, perhaps, to the North Pacific.

(vi) Data from IGY wave recorders at various island locations would be studied in an attempt to understand the origin and propagation of wind waves, swell, and tsunami waves. Some of these wave systems may also be related to atmospheric effects. Wave forecasting in the Pacific Ocean has already saved many lives and much property by warning of impending arrival of tsunami waves, but we are only at the beginning of understanding these phenomena.

Special projects in glaciology

The IGY has stimulated the greatest glaciological program that this country has known. The program has taken scientists into new areas such as the Antarctic, has provided increased emphasis on areas studied before, such as Alaska and the Arctic Basin, and use is being made of new tools and techniques, such as radioisotope dating and deep drilling. In addition, corollary meteorological and oceanographic data greatly enhance the value of the glaciological work. Six special projects are proposed to pursue these new and augmented areas made possible by the IGY:

(i) The state of health of glaciers in intimately related to its meteorological environment, but the relation is not at all simple or intuitively straightforward. Micrometeorological and radiation measurements would be studied to increase our understanding of the heat exchange in the air-ice interface and the effects of meteorological changes in glacial conditions and of glacial ice mass on local meteorology.

(ii) The distribution, extent, types, and characteristics of glaciers in equatorial, temperate, and polar regions would be studied to determine the causative factors involved in variations of glacier behavior, i. e., growth or shrinkage.

(iii) The crystal structure of snow, firn, and ice, ice deformation and mechanics of ice flow and structure of glaciers would be studied to increase our understanding of glacial behavior in terms of the properties of ice.

(iv) The new and augmented techniques utilized in the IGY would be analyzed in terms of the scientific data obtained to aid in developing better experimental techniques for future scientific work.

(v) The relationships of the Arctic icepack, glaciers, and adjacent oceans would be studied, along with data on the Antarctic ice-ocean interface and the general effects of glacier ice on oceans. These relations between the solid and liquid phases of water is an important part of the heat budget of the earth's surface.

(vi) Glaciers are an unequaled storehouse of information on past climate, precipitation, and circulation systems. Ice cores penetrating over 1,000 feet and several thousand years into Arctic and Antarctic ice masses would be studied for pollen, dust, radioactive isotopes, entrapped air, annual precipitation, and biological debris, to learn about conditions and amount of past precipitation and detailed climatology of past centuries.

THE HEAT AND WATER BUDGET OF THE EARTH

While we have discussed some special projects by separate discipline, water is one of the essential ingredients in the sciences of meteorology, oceanography, and glaciology. The water budget of the earth affects our civilization profoundly—our very sustenance, for example, depends on the right distribution of water as precipitation. The heat budget is one of the primary factors in our weather, and the equable climate of the earth, upon which life depends, is regulated by nicely balanced elements affecting the heat budget. Many areas now densely populated have in the past known climates intolerable to man's existence. Some of the earth's barren areas of today knew flourishing civilizations or luxuriant flora and fauna in past times of different climatic conditions. Our efforts to understand our environment at the earth's surface, and the heat and water relationships upon which it depends will be crucial to solution of problems arising even now stemming from depletion of our natural resources, such as farmland, and the world's exploding population.

Some important breakthrough in geophysics have occurred recently which have greatly increased our ability to learn more about our environment. One

of these important advances, for example, was the perfection of techniques to measure the ratio of two isotopes of oxygen, oxygen 18, which is very rare, and oxygen 16, the most abundant form of this element. The amount of oxygen 18 in rainwater, for example, depends on the temperature where the raindrops were formed, and thus supplies otherwise unobtainable information on the heights of rain formation. Similarly, oxygen ratios measured for glacier ice tell us much about the temperature conditions which prevailed when particular layers accumulated.

The observational material resulting from the IGY will be the subject of research and study for decades under normal research activity. This work will be sponsored by many agencies in their normal programs of geophysical support. Some areas of geophysics, however, have literally exploded as a result of the IGY, and under this tremendous stimulation some important breakthroughs have opened up new avenues of investigation, have made possible new kinds of geophysical studies.

The special interdisciplinary research program proposed by the United States National Committee for the IGY is not meant to supplant any existing support which will certainly continue and in fact should grow. Rather it is intended to take advantage of the availability of geophysical data unique in scope and content, and the new analysis techniques, both experimental and theoretical, to break through our barriers of understanding in a few key places. Such an effort, of perhaps only a few years, would profoundly alter and redirect observational and theoretical geophysics in coming years. We submit that this concerted effort to tackle a few of the major problems of geophysics, to win a few key understandings in these highly complex and interrelated scientific fields, is a necessary adjunct to the IGY program itself.

SUPERVISION OF PROGRAM OF IGY

Mr. YATES. It occurs to me with respect to what Mr. Jonas has said that these are by inference, if not actually, grants to the National Science Foundation under its general program system, to a branch of its work, the International Geophysical Year. If you struck out the name "International Geophysical Year" you would have to put some other kind of a name in there, or allocate it to some university to do the same kind of work. What is happening here actually is that the funds for International Geophysical Year are flowing through the National Science Foundation and being channeled over into International Geophysical Year. The programs for International Geophysical Year, I assume, are undergoing the same type of scrutiny and procedures and supervision as other programs which are not apart from the National Science Foundation. Is that a correct statement?

Dr. WATERMAN. Yes.

Mr. YATES. Would you agree with that?

Dr. WATERMAN. If it were in our regular research program it would come in under the heading of the science involved, say, geomagnetism, in which case the university might do some work themselves, based on IGY, but this would not be done by an international committee in the sense of this one. It would not be part of IGY. We would refer it to our advisory panels and reviewers in the field of geomagnetism.

Mr. YATES. Perhaps the difficulty rises through the use of the name Post International Geophysical Year.

Dr. WATERMAN. Perhaps so.

Mr. YATES. You would have to find some other type of a name that would have to be used for the purpose but the purpose would still be there and the need for the funds would still be there, I think. I will be glad to hear from Dr. Odishaw.

DISTINCTION BETWEEN NORMAL AND SPECIAL RESEARCH

Dr. ODISHAW. I should like to amplify your comments, Mr. Chairman, and in the context of Mr. Jonas' question.

On page 7, there is the distinction made between normal research and special research. Now the kind of project that Mr. Jonas inquired about, that type of project will be directed toward the National Science Foundation. There will be literally hundreds of those projects that would be coming to the National Science Foundation in a normal way. I just do not know how Dr. Waterman is going to handle those normal research projects.

What we are here concerned with is a special package of interdisciplinary research, that would not normally come to the National Science Foundation. It is a new approach in an attempt to mesh together separate scientific fields and, as Mr. Jonas pointed out, to capitalize on the very radical and explosive situations: first the vast amount of data as a result of the increased participation in the IGY and, second, some of these new discoveries. It is a special, directed, interdisciplinary approach. The National Science Foundation, however, will still have literally hundreds of projects under this normal research approach made by an individual investigator to study a particular small area.

PRESENT NEEDS FOR SPECIAL RESEARCH

Mr. YATES. I think the committee is aware of the point that IGY is making, and I think it is sympathetic to its request. The question, as I see it, is, How much money will be necessary for the completion of your projects; or for carrying on your projects, as Dr. Kaplan pointed out before, in the field of geophysics in subsequent years? The next question is, How much money do you need at this time?

Were you told, when your funds were cut by the Bureau of the Budget, that this was all that you will receive for your purpose, or were you told that this is all that you can receive at the present time for your purpose?

Dr. KAPLAN. I wasn't there.

Mr. YATES. Do you understand the distinction?

Mr. SHEPPARD. Yes, sir; I think so, Mr. Yates. Actually the Bureau of the Budget's action allowed money for this purpose up through the first quarter of fiscal year 1960 in most instances, so this did not disallow additional funds being requested for this purpose. But I think there was an assumption—and I am guessing here—I think there was an assumption that this transition we have been discussing would take place and this would then be funded from the Foundation's regular program.

Mr. YATES. The next question I have is, Suppose you were not given this amount of money in a supplemental appropriation but are requested to come back in the form of a regular appropriation?

How will you be injured? You need this much money at this time.

Dr. KAPLAN. We certainly do. I indicated earlier that we really need more.

Mr. YATES. At this time, or over the period extending on? How much of your work can be deferred until later years?

Dr. KAPLAN. To keep the enthusiasm, the teams to generate programs of this sort, properly takes time, and to lose even 6 months, the remaining 6 months would be an important loss—we have already lost a lot of time. We could have been doing this work already. Perhaps other nations are doing this sort of thing, and to lose this kind of time, this program would be something that I wouldn't want to be responsible for.

Mr. YATES. How do you lose teams in this? You propose to hire additional members of your teams or additional people. This is not the so-called teams that you are talking about; is it?

Dr. KAPLAN. Actually at the present time with the enthusiasm and the impact of these new results—and here again, people like Dr. Revelle, Mr. Shapley, and others, can verify what I have to say, one of the great needs of this Nation will be met by the same young scientists now in these fields. Mathematicians, scientists, are drawn into this field. The IGY programs will attract them. The IGY structure will enable them to get in and get to work quickly.

Mr. YATES. You want to maintain the flush of conquest which you have generated and to continue the momentum of the program until such time as the maximum amount of good has been completed. Then, you can start tapering off and proceed as usual. You think it would be harmful to cut this off at this particular time?

Dr. KAPLAN. I am sure it would. It would hurt the development of an important new area of thinking, in which this Nation has been weak.

Mr. JONAS. I do not think Dr. Kaplan responded to that question. He asked you, How do you mean you are losing teams? We haven't cut anybody off so far.

Mr. SHAPLEY. You see, a considerable part of the IGY or some part of it has already passed.

Mr. YATES. You only have 6 months left in the year.

Mr. SHAPLEY. There are only 6 months left. The opportunities of using people include those that have returned from a year of service in the Antarctic or from the Arctic, people whose participation in the observational phases is ending.

IMMEDIATE OPPORTUNITIES TO CAPITALIZE ON RESEARCH

Mr. JONAS. Did you ask for this money in the regular budget?

Dr. ODISHAW. No.

Mr. JONAS. Why? You must have known the importance of this work when the regular budget was prepared.

Dr. ODISHAW. When the regular budget was prepared, Mr. Jonas, no one anticipated—unfortunately no one had a good enough crystal ball—that the program would be as successful as it has turned out.

Dr. Kaplan mentioned that table, which is an indication of, say, the growth in the number of stations, from just a few hundred at one of our early hearings to more than 2,500 as of the opening of the IGY. This could not have been anticipated. In a sense there is an embarrassment of riches here. The second thing is that no one could have anticipated and no one would have dared come before this committee, therefore, for such a research program without the discoveries that have already been made.

The descriptions you had, say, from Dr. Porter on this radiation zone discovered as a result of the satellite experiment; the observations of the peculiar behavior of radio waves from Soviet satellites where you get a signal 180° away from the source of the signal; the currents beneath the ocean which had not been accounted for before IGY but which now require a new set of theories and explanations—those things were not known and it is basically radical discoveries of that kind which have only recently shown our need for a special research program. I could go on with some more examples, about airglow, or Dr. Simpson's work. You remember his description of this cosmic-ray equator which shakes our beliefs about magnetic effects in space. These startling discoveries have made this really an opportunity as well as, in a sense, a situation where we are confronted with an embarrassment of riches.

Mr. JONAS. When the regular budget was in preparation, you had not realized that the IGY would be successful? Is that what you say?

Dr. ODISHAW. We had not realized it would be so spectacularly successful.

Dr. ODISHAW. For example, look at this program in terms of the growth of the stations, which is, I might say, conservative. Actually the number of stations is over 5,000.

Mr. YATES. His explanation is very much like that given to us in the Appropriations Committee when they ask for additional funds for a certain missile program because they had just made a breakthrough discovery.

Mr. JONAS. I appreciate the fact you did not ask for the funds earlier, until you were satisfied you really needed them.

Dr. WATERMAN. That has been the case.

Mr. JONAS. I am not critical. I wondered why you had not asked for the money in the regular appropriation bill.

Dr. REVELLE. That is because you cannot anticipate scientific discovery.

Dr. WEXLER. The IGY has had an impact on ourselves as individual scientists. When I started out I was a narrow meteorologist. Now I am interested, broadly, in the upper atmosphere.

Mr. YATES. We want to help you.

Dr. WEXLER. Our own psychology is undergoing a change. A few years ago I never dreamed I would be concerned with conditions under a few thousand feet of ice trying to figure out how much heat comes from the earth. I am sure this is true of other people connected with IGY. This tying in of oceonography, the upper atmosphere, glaciology, is a new development. We now recognize that geophysics is one big system. We want to preserve this spirit. I do not want to retire back to being a narrow meteorologist again. I am sure the other gentlemen feel the same way. When Mr. Jonas asked why we did not anticipate this a few years ago, we were different individuals then.

Mr. JONAS. I don't mean a few years ago. I mean last spring.

Dr. WEXLER. The data from the Antarctic has just arrived within the last few months. The ships brought it in in May.

Mr. YATES. Is there a reason why Dr. Porter is not with us today? Mr. Jonas in sotto voce asked me what is going on with him.

Dr. KAPLAN. He is at another meeting and since the item on the satellite was not included in this, we did not ask him to come.

Mr. JONAS. I asked if we are going to get VANGUARD up before December 31

Dr. WATERMAN. The Navy is still optimistic. In justice to them I think they have had pretty awkward luck. At this last launching everything went right on time to the second until 30 seconds before the firing. Then a radar communication link, with the missile, had to be attended to. That took a matter of several hours, which gives an opportunity for troubles to arise.

Mr. JONAS. They are still optimistic?

Dr. WATERMAN. Yes.

Mr. YATES. We have not listened to our good friends who are expanding the frontiers of science. Should we do so? Do you have any other questions?

Mr. JONAS. No.

Mr. YATES. Is there anything further you want to tell us before we go?

Dr. KAPLAN. I think the record will speak for itself, unless they want to add anything.

Mr. YATES. Dr. Revelle, is there anything about the underground river you want to tell us, or should we wait until your research is a little more complete?

FUTURE INTERNATIONAL RESEARCH IN GEOPHYSICS

Dr. REVELLE. I would like to comment on this general thing we have been discussing, of the request for funds after the end of the IGY. There will be other cooperative international programs, right now the International Council of Scientific Unions, of which Dr. Berkner is the president, has three special committees on the same pattern as the IGY. One of those is for the study of the oceans, called the Special Committee on Oceanographic Research. Their purpose will be in the field of the study of the oceans, to continue the pattern developed during the IGY, the pattern of national support of international observational enterprises.

For example, one of the major programs of this Special Committee on Oceanographic Research will be an international year-long expedition to the Indian Ocean, which is the part of the earth that is less known than any other. Some 11 nations will take part in this. The United States will certainly want to play a major role.

It is also true that in my field of marine sciences, that the National Academy is considering, in cooperation with other Government agencies, the Navy, Atomic Energy Commission, the National Science Foundation, and the Fish and Wildlife Service, a national program in oceanography. This program involves construction of ships, of laboratory facilities, of special devices, like the Bathyscaphe, and will involve a considerable number, an increase in the number of people in the marine sciences. We would probably consider doubling of the present effort in the marine sciences, on the basis of the Navy's needs, AEC's needs, those of the Fish and Wildlife Service, and the country as a whole for understanding the ocean.

The characteristic thing about this particular IGY request is, just as Dr. Wexler has said, that it does not involve any special science. It involves all of the sciences that are involved with the earth, and it involves carrying on the momentum that we have built up in this direction.

For example, take my own laboratory, the Scripps Institution. We will certainly want to continue some of the people who are now paid out of IGY funds on the work that they are now doing—not observationally but sitting back and thinking about what they have done. If we have no funds to do this, if we do not receive this money, what will inevitably happen is that a great deal of what they have done is lost and these people will have to go to work on other projects.

Mr. YATES. I think most members of the committee agree that this is a good process. I think there will be some appropriations. Do you not think so?

Mr. JONAS. Yes.

Mr. YATES. Thank you, Dr. Revelle, for your statement. Thank you, gentlemen, for coming here today.

Did you want to say something?

Dr. KAPLAN. I want to take this occasion to thank you for the opportunities we have had to appear before you. We have been before you off and on for 4 years. I want to go on record as thanking you for a very pleasant experience.

Mr. YATES. It has been equally pleasant for the committee.

Dr. WATERMAN. I would like to second Dr. Kaplan's remarks. This has been a very impressive and successful venture, right through IGY.

Mr. YATES. Thank you very much.

JULY 2, 1958.

GENERAL SERVICES ADMINISTRATION

WITNESSES

MAX MEDLEY, COMPTROLLER
J. H. MACOMBER, JR., ASSOCIATE GENERAL COUNSEL

PUBLIC BUILDINGS SERVICE

F. MORAN McCONIHE, COMMISSIONER, PUBLIC BUILDINGS SERVICE
WILLIAM A. SCHMIDT, ASSISTANT COMMISSIONER, PLANNING
GEORGE W. DORSEY, CHIEF, WAGE ADMINISTRATION, PERSONNEL DIVISION, GSA
EDWARD WILSON, BUILDINGS MANAGEMENT SPECIALIST

DEFENSE MATERIALS SERVICE

HAROLD F. HOLTZ, COMMISSIONER
JOHN G. HARLAN, ASSISTANT COMMISSIONER
FRED W. HUSTON, DIRECTOR, INDUSTRIAL EQUIPMENT

OFFICE OF SECRETARY OF DEFENSE

JOHN H. WILLIAMS, CHIEF, PRODUCTION AND EQUIPMENT, SUPPLY AND LOGISTICS

Mr. YATES. Mr. McConihe, do you have a statement?

Mr. MCCONIHE. No, sir; no prepared statement. We are here today in support of this supplemental request.

Mr. YATES. House Document No. 394, which is a communication from the President of the United States, shows the supplemental requests from General Services Administration on pages 9 and 10. It may be inserted in the record at this point.

(The document referred to follows:)

"GENERAL SERVICES ADMINISTRATION

"OPERATING EXPENSES, PUBLIC BUILDINGS SERVICE

"For an additional amount for 'Operating expenses, Public Buildings Service', $6,400,000; *and the limitation under this head in the Independent Offices Appropriation Act, 1959, on the amount available for travel expenses of employees, is increased by $6,000.*"

This proposed supplemental appropriation includes $2,500,000 to cover the additional costs during 1959 of wage-board pay increases granted between July 1, 1957, and May 4, 1958.

Also included are funds in the amount of (1) $400,000 to cover increases in rental costs in 1959 over 1958 where leases are renewed for presently occupied space and (2) $3,500,000 to permit financing the cost of maintaining an unanticipated increase in a reserve of machine tools and industrial manufacturing equipment.

"CONSTRUCTION, PUBLIC BUILDINGS

"For an additional amount for 'Construction, public buildings', $323,000, to remain available until expended."

The appropriation of $2,125,000, made available by the Independent Offices Appropriation Act, 1958, for the construction of border station facilties at five locations for the use of the Bureau of Customs, Treasury Department, and Immigration and Naturalization Service, Department of Justice, is insufficient to complete the work due to increases in site costs at San Ysidro, Calif., and Madawaska, Maine. This proposed supplemental appropriation is needed to complete acquisition of the sites for the facilities to be constructed.

"EXPENSES, SUPPLY DISTRIBUTION

"For an additional amount for 'Expenses, supply distribution', $177,000.

"OPERATING EXPENSES, NATIONAL ARCHIVES AND RECORDS SERVICE

"For an additional amount for 'Operating expenses, National Archives and Records Service', $36,000."

The two foregoing proposed supplemental appropriations are to cover the additional cost during 1959 of wage-board pay increases granted between July 1, 1957, and May 4, 1958.

OPERATING EXPENSES, PUBLIC BUILDINGS SERVICE

All right, proceed, Mr. McConihe.

Mr. MCCONIHE. The first item is for $6.4 million, broken down into 3 parts.

COST OF WAGE BOARD RATE INCREASES

No. 1 is $2.5 million to pay on a full year basis the wage board rate increases which have been granted between July 1, 1957, and May 4, 1958. Those are broken down in detail in an exhibit included with the justification.

Mr. YATES. That is indicated on page 1 of your justifications, which may be inserted in the record at this point.

(The justification follows:)

GENERAL SERVICES ADMINISTRATION

SUPPLEMENTAL ESTIMATE OF APPROPRIATIONS, 1959

APPROPRIATION LANGUAGE

"OPERATING EXPENSES, PUBLIC BUILDINGS SERVICE

"For an additional amount for 'Operating expenses, Public Buildings Service', $6,400,000; *and the limitation under this head in the Independent Offices Appropriation Act, 1959, on the amount available for travel expenses of employees, is increased by $6,000.*"

GENERAL STATEMENT

This proposed supplemental appropriation includes (1) $2,500,000 to pay on a full-year basis the wage board rate increases which have been granted between July 1, 1957, and May 4, 1958, (2) $400,000 to pay for increases in rental rates above those reflected in the budget estimate for 1959, and (3) $3,500,000 to permit financing the cost of maintaining an unanticipated increase in a reserve of machine tools and industrial manufacturing equipment.

(1) *Wage board rate increases, $2,500,000.*—Page 22 of GSA 1959 budget estimates stated that no provision was made for cost in 1959 covering wage board rate increases effected during 1958 nor for those to be effected during 1959. It was indicated that funds would be requested in a supplemental estimate for 1959 as contemplated by section 210, Public Law 85–48.

A supplemental appropriation is requested at this time to cover the increased cost during 1959 due to rate increases effected from July 1, 1957, through May 4, 1958. Cost in 1959 for increases to be effected from May 5 through June 30, 1958, as well as costs for such further increases as may be effected during 1959 will require future supplemental appropriations.

Exhibit A, which follows, sets forth by locality the cost in 1959 of rate increases effected July 1, 1957, through May 4, 1958, for employees under the buildings management fund; 80 percent of the employees under the buildings management fund are financed by appropriation "Operating expenses, PBS," and 20 percent are financed by reimbursement from other agencies and/or appropriations. Estimated costs in 1959 for the portion of wage-rate increases financed under this item are as follows:

Total cost of rate increases for employees under buildings management fund	$2,931,750.14
Less 20 percent financed by other agencies and/or appropriations	—586,350.14
Financed by "Operating expenses, PBS" (80 percent)	2,345,400.00
Plus payments to retirement fund at 6½ percent	152,451.00
Total	2,497,851.00
Estimate for "Operating expenses, PBS" (rounded)	2,500,000.00

INCREASED RENTAL RATES

Mr. MCCONIHE. The second part is $400,000 in additional funds required in 1959 under the buildings management activity, to pay for costs due to increased rental rates. That estimate is broken down in the justification by regions, and we have a further breakdown, if you desire it, by actual buildings. The supplemental estimate was made by our regions some time ago and we have just gotten the latest one from them, which indicates we now are going to have to pay $707,000 in increased rentals.

Mr. YATES. Do you mean the $400,000 item is not accurate?

Mr. McConihe. It was an estimate made earlier in the year.

Mr. Yates. What is the actual amount that you need?

Mr. McConihe. $400,000 is all we are asking for. We have a breakdown on that if you would like to have it, building by building.

Mr. Yates. I think perhaps the top of page 2 should go in the record.

(The document referred to follows:)

(2) Material receipt and handling. This includes handling of new selections, under the buildings-management activity of this appropriation to pay for costs due to increased rental rates.

The 1959 estimate included no allowance for increased rentals. Increased rental cost during 1959 over 1958 due to recurring renewal of leases for existing space for continued occupancy to compensate lessors for increased cost and servicing of space total $400,000 distributed among the various regions, as follows: Boston, $68,000; New York, $180,000; Atlanta, $115,000; Chicago, $36,000; Dallas, $10,000; Seattle, $22,000; total, $431,000, rounded to $400,000. The total estimated annual base rental for 1959 is $44 million including this increase. This additional requirement is approximately a 1 percent increase over 1958 rentals for the same space.

Increased rental costs, 1959 fiscal year

Region	Original estimate	Revised estimate	Region	Original estimate	Revised estimate
Boston	$68,000	$97,800	Dallas	$10,000	$46,100
New York	180,000	165,000	Denver	----------	8,000
Washington, D. C	----------	22,800	San Francisco	----------	64,100
Atlanta	115,000	17,800	Seattle	22,000	32,800
Chicago	36,000	212,500			
Kansas City	----------	40,600	Total	431,000	707,500

Mr. Yates. Rentals are increasing all over for the space you occupy?

Mr. McConihe. Yes, sir.

Mr. Yates. I notice that you have an item here for Chicago of $36,000.

Mr. McConihe. That is now up to $212,500.

Mr. Yates. From $36,000 to $212,500?

Mr. McConihe. Yes, sir.

Mr. Yates. That is in the chart you just showed me. This chart only shows an increase of $2,200.

Mr. Medley. The $212,500 is in the Chicago region, Mr. Yates, which covers all of those locations.

Mr. Yates. Region 5 is what you are talking about, rather than Chicago?

Mr. McConihe. Yes. The largest one is at Cleveland. I believe it is a Naval installation, which has been occupied under an old lease. The rent increased 50 percent. It is a lease which we have had for some 12 years.

Mr. Yates. What do you use it for?

Mr. McConihe. It is the Navy finance center. That is footnoted in the tabulation.

Mr. Yates. You have checked into the space that these rentals cover? It is all still needed?

Mr. McConihe. Yes, sir.

PROPOSED FEDERAL BUILDING, CHICAGO, ILL.

Mr. YATES. What is happening to our proposed Federal project for Chicago? That is the Federal project, the courthouse, which is not a part of this justification, but as a part of my own information.

Mr. MCCONIHE. Legislation authorizing the project has been introduced. We are studying proposed legislation to authorize a general program. The project will be part of a program that we would submit.

Mr. YATES. Is there any reason why you should not consider it a part of your preliminary planning now?

Mr. MCCONIHE. We are, yes sir.

Mr. YATES. You are considering this as part of your preliminary planning. An item will be submitted when?

Mr. MCCONIHE. As soon as we have legislation authorizing a program, we can submit a fully documented program for projects of that type. We know there is a need there.

Mr. YATES. Chicago will be on that list?

Mr. MCCONIHE. Yes, sir. It is in our planning now.

Mr. YATES. When do you anticipate you will be able to move toward sites and planning?

Mr. MCCONIHE. That will depend on getting appropriations for sites and planning.

Mr. YATES. Will you request that?

Mr. MCCONIHE. I would think we would request that during the next session.

Mr. YATES. Even though the lease-purchase program fails?

Mr. MCCONIHE. We would know when the legislation is passed.

Mr. YATES. Assuming that the lease-purchase program fails, will you ask for that project to be financed by a direct appropriation?

Mr. MCCONIHE. We would probably include the project in a program to the Bureau of the Budget; yes, sir; and ask for sites and expense money for it.

Mr. YATES. For the first programs that are to be included?

Mr. MCCONIHE. Yes, sir.

Mr. YATES. Item No. 3——

Mr. MCCONIHE. I would like to ask you to pass over item No. 3 at the moment, because that is going to be handled by Commissioner Holtz of the Defense Materials Service.

CONSTRUCTION, PUBLIC BUILDINGS (BORDER STATIONS)

The next one would be "Construction of public buildings, the border stations."

Mr. YATES. We will insert page 13 into the record, also page 14.

(The justification follows:)

GENERAL SERVICES ADMINISTRATION

SUPPLEMENTAL ESTIMATE OF APPROPRIATION, 1959

APPROPRIATION LANGUAGE

"CONSTRUCTION, PUBLIC BUILDINGS

"For an additional amount for 'Construction, public buildings', $323,000, to remain available until expended."

GENERAL STATEMENT

"The appropriation of $2,125,000, made available by the Independent Offices Appropriation Act, 1958, for the construction of border station facilities at five locations for the use of the Bureau of Customs, Treasury Department, and Immigration and Naturalization Service, Department of Justice, is insufficient to complete the work due to increases in site costs at San Ysidro, Calif., and Madawaska, Maine. This proposed supplemental appropriation is needed to complete acquisition of the sites for the facilities to be constructed." (From H. Doc. 394, 85th Cong.)

A comprehensive study was made of the physical requirements at each location, in an attempt to program all 5 projects within the amount available. This study disclosed that minimum facilities cannot be provided at all 5 border stations within the amount appropriated due primarily to substantial increases in site costs at San Ysidro, Calif., and Madawaska, Maine, over those included in the original estimates for those projects.

An additional amount of $323,000 will be needed to acquire the sites selected for location of the facilities to be constructed.

Design contracts have been awarded for 4 border stations and negotiations for the award of a design contract for the Madawaska project will be started soon.

JUSTIFICATION

1. *Border station, San Ysidro, Calif., $258,000.*—The present border station facilities were placed in operation in 1933 and are inadequate to handle traffic at this important point of entry from Mexico. Tourist traffic from the United States to the Mexican Tijuana-Ensenada area has grown rapidly in the past few years. First class restaurants and motels are springing up on both sides of the border and property values have increased accordingly. Inspection lanes are to be expanded from 4 to 19 lanes to accommodate a continuing increase in traffic which at times backs up on the Mexican side of the border for as much as 3 miles.

The additional facilities are to be located on the west side of the State highway, directly opposite the present Government-owned border station. The estimated cost of the site was originally placed at $200,000. Based on a recent appraisal, the cost of the site will total $458,000, exceeding the original estimate by $258,000, which is included in this estimate.

2. *Border station, Madawaska, Maine, $65,000.*—The lack of adequate facilities on this international highway results in a bottleneck causing traffic to back up across the river into the Canadian town of Edmundston. This station is an important inland port of entry on the Canadian border. Construction of additional facilities to meet the increasing flow of traffic is urgent.

The project originally contemplated the erection of a border station on a site to be acquired from the Fraser Paper Co. Due to possible future extension of their plant the Fraser Co. vigorously objected to the Government taking any of their property as a site for additional border facilities.

The only other appropriate location for the new facilities will require moving the railroad station and tracks of the Bangor & Aroostook Railroad. The cost of acquiring the alternate site is estimated to be $75,000, exceeding the original site cost estimate by $65,000 which is included in this estimate.

SUMMARY OF THE ESTIMATE

Following is a summary of the estimated cost for the 5 projects included in the program:

Project	Present estimate	Additional amount required	Revised estimate
Brownsville, Tex.	$565,000	----------	$565,000
Eagle Pass, Tex.	365,000	----------	365,000
Madawaska, Maine	195,000	+$65,000	260,000
Rooseveltown, N. Y.	280,000	----------	280,000
San Ysidro, Calif.	720,000	+258,000	978,000
Estimated cost	2,125,000	+323,000	2,448,000
Presently available	----------	----------	2,125,000
Amount of this estimate	----------	----------	323,000

Mr. YATES. Tell us about this justification.

INCREASED COST OF SITE AT SAN YSIDRO, CALIF.

Mr. MCCONIHE. We have run into two problems, both in land acquisition. The original estimate for the San Ysidro project was based on appraisals made a couple of years ago. Current appraisals show the land value has increased and we need $258,000 more.

A similar situation exists in Madawaska, Maine.

Mr. YATES. When did you have your original presentation?

Mr. MCCONIHE. That was made in 1956. There has been a great deal of activity in the San Ysidro area. This area has been, I am told, taken into the city of San Diego. There has been a great deal of activity in this area which has increased property values.

Mr. YATES. Apparently the site was not purchased then?

Mr. MCCONIHE. No, sir.

Mr. YATES. Had you requested the money before?

Mr. MCCONIHE. Mr. Chairman, I believe so.

Mr. SCHMIDT. This item was included in an appropriation made in 1958, a total of $2,125,000 for 5 border stations. San Ysidro and Madawaska are 2 of the 5. We are proceeding with the design and the acquisition of sites for these stations. On two we have run into difficulty on land values.

Mr. YATES. This is one of them?

Mr. SCHMIDT. San Ysidro is one and Madawaska the other.

Mr. YATES. What do you do when you acquire sites of this type? Do you take them to court or do you negotiate with the owners? What procedure do you use?

Mr. MCCONIHE. We have them appraised first. If we can negotiate on the basis of that appraisal, we do, and if we cannot negotiate, then we take it to court. Of course, we have no flexibility in the selection of sites for border stations. They have to be in a certain spot. San Ysidro is an extension of the existing facility.

Mr. THOMAS. How could you have missed your estimate by over 100 percent in 2 years? It goes from $200,000 to $458,000.

Mr. MCCONIHE. Apparently there has been a lot of real-estate activity there, Mr. Thomas. It is a very busy spot. Motels and other businesses have been growing up there.

Mr. THOMAS. How much land are you planning to acquire?

Mr. MCCONIHE. We need about 6.8 acres. The primary inspection facility is being increased from 4 to 19 lanes, with secondary inspection areas.

INCREASED COST OF SITE AT MADAWASKA, MAINE

Mr. YATES. How could you miss your estimate in this Madawaska site so badly? You state on page 14 that the cost of acquiring the alternate site is $75,000, exceeding the original appraisal by $65,000.

Mr. MCCONIHE. That was a very unusual situation. We intended to take a tract of land from a paper company. The paper company protested very vigorously, as it would affect their planned expansion. That forced us to the only other site, involving a railroad. We have to move some railroad facilities.

Mr. THOMAS. I think your answer in your California project is the expansion of the number of lanes from 4 to 19.

Mr. MCCONIHE. We have the backup information on both the California and Madawaska situations.

Mr. YATES. Does that complete your testimony, Mr. McConihe?

Mr. MCCONIHE. Yes, sir.

OPERATING EXPENSES, PUBLIC BUILDINGS SERVICE

WAGE BOARD RATE INCREASES

Mr. JONAS. On these wage-board increases, I understand from the written justification that they involve about a 1-percent increase in wages since last July 1; is that right?

Mr. MCCONIHE. It is more than that, sir.

Mr. JONAS. How much would it be?

Mr. MCCONIHE. I think the increase is about 5½ percent.

Mr. DORSEY. 5.69 percent.

Mr. JONAS. Approximately how much increase?

Mr. DORSEY. 5.69 percent increase over the previous year.

Mr. JONAS. Since July 1, 1957?

Mr. DORSEY. No, sir. The increases that we have granted from July 1, 1957, through May 4, 1958, amount to 5.69 percent over the wages that we paid last year in these particular areas cited in the record.

Mr. JONAS. Prior to July 1, 1957?

Mr. DORSEY. That is right.

Mr. JONAS. Is that a general wage increase condition that pertains all over the country?

Mr. DORSEY. The average increases in the country have been about 5 percent in wages over the past year. I made a spot check on that myself from BLS community wage surveys in about 20 metropolitan areas through out the United States. The pattern varies from about 4 to 7 percent, averaging out to around 5 percent. I also checked that with the BLS to see whether my computations coincided with theirs, and they informed me they do.

Mr. JONAS. Do you have your own wage board at GSA in these cities?

Mr. DORSEY. In most of our areas we use the wage information which the Department of Defense gathers. They have been making wage surveys for a number of years. We merely use their data and supplement it with data from nonmanufacturing firms and develop our wage line.

Mr. JONAS. Then if you find, for example, in region 1, which is New England, that the wage scale you pay is under existing levels in similar activities, you grant an increase?

Mr. DORSEY. That is right, sir. The Department of Defense makes the surveys, and in certain areas we supplement the information which they gather, either through data obtained from the BLS, or through conducting small-scale surveys ourselves, or taking data which Veteran's Administration gathers and then develop our wage line. If the wage line comes up to a higher level than previous rates we were paying, increased rates are authorized.

Mr. JONAS. Generally speaking, what do your employees do in that locality?

Mr. DORSEY. Clean the buildings, run the elevators and maintain the leased and Government-owned buildings in the area.

Mr. JONAS. Why would a Department of Defense investigation and the records there have been pertinent? They deal more with construction, do they not?

Mr. DORSEY. No, sir. They have a large-scale maintenance operation in Army camps, posts, and stations throughout the United States. They employ carpenters, operating engineers, painters, steamfitters.

Mr. JONAS. Do you make a comparison with private industry in the Boston area, for example?

Mr. DORSEY. The Boston area happens to be one of the areas which the Department of Defense surveys. They have 20 some key jobs, like carpenter, painter, steamfitter on which they obtain wage data. They will survey manufacturing firms in the Boston area and find out what wages they are paying for those particular occupations. On the basis of these key jobs which they survey to gather prevailing rates they construct a wage line on the basis of the data which they obtain from these periodic surveys which they make in 250 labor-market areas throughout the United States.

Mr. JONAS. Do you make any independent check or do you accept their figures?

Mr. DORSEY. We have in GSA a schedule of rates which we call a custodial schedule of rates. We do not check the trades and craft rates they obtain, but, when it comes to custodial workers, we supplement the data which they obtain. It so happens in Boston we do not have to make this supplemental survey of nonmanufacturing firms. The BLS does that periodically. We merely take the data which they gather and then combine it with the data which the defense agencies gather, and construct a wage line for custodial workers, which is lower than what the manufacturing firms pay.

Mr. JONAS. Do you have any areas in the United States in which the scale has gone down in the last year?

Mr. DORSEY. No, sir; we have not.

Mr. JONAS. They are all up?

Mr. DORSEY. They are all up. They have been for, as far as I know, since way back in 1943. I have heard of a couple of areas before I became too involved in this where it was found that wages had declined. I don't know of any instances where the actual wage rates have gone down. The hours of work have been shortened so the take-home pay is less and when you make a survey, that shows up.

Mr. JONAS. It is a strange situation. Five million unemployed and wages and prices going up.

Mr. THOMAS. If the gentleman will yield, when did this new act go into effect? Has it been 2 or 2½ years now?

Mr. DORSEY. It was passed by Congress September of 1954, I believe.

Mr. MEDLEY. September 1, 1954.

Mr. DORSEY. We had a year in which to effectuate it. We waited until August 28, 1955. We had until September. We put it in effect in August of 1955.

Mr. THOMAS. Mr. Jonas, may I ask that we have a table inserted in the record at this point? This law requires a periodic check for

work done by industry, "The same or similar type of work." I believe that is the way the act reads.

Mr. DORSEY. It says we will fix and adjust rates of these employees in accordance with prevailing rates and in accordance with the public interest.

Mr. THOMAS. Do you go by the same or similar types of work?

Mr. DORSEY. Yes, sir.

Mr. THOMAS. Give us a table showing how often you do this. Is it every 6 months under the act?

Mr. DORSEY. No, sir. There is nothing prescribed under the act. We more or less follow what Defense does.

COMPARISON OF WAGE INCREASE OF WAGE BOARD EMPLOYEES AND CLASSIFIED EMPLOYEES

Mr. THOMAS. How many different pay raises have you given? I can testify to several.

Mr. DORSEY. It averages about once a year.

Mr. THOMAS. Give us two columns in this table, showing the increase in pay scales under this act. I think you have come in with five separate requests. Show what each one is, and the total in that column, and then show what the increase is in the same period of time for the regular civil-service employee.

Mr. DORSEY. Dating back to when?

Mr. THOMAS. The date of the act.

Mr. MEDLEY. We will do that, Mr. Chairman.

(The data is as follows:)

Percentage increase in pay scales for wage board and classified employees of GSA (1956 through 1958, above 1955 [1] base)

Fiscal year	Wage board		Classified, increase over 1955 base
	Increase over prior year	Increase over 1955 base	
1956	5.59	5.59	----------
1957	5.58	5.89	----------
1958	5.69	6.33	10.0
Total increase over 1955 base	----------	17.81	10.0

[1] Bulk of GSA wage board employees converted from classified to wage board Aug. 28, 1955.

Mr. JONAS. That is exactly what I was leading to myself. I appreciate your taking it over.

MACHINE TOOL RESERVE INCREASES

Mr. YATES. We will put pages 6, 7, 8, and 9 in the record, Mr. Reporter.

(The justification follows:)

(3) *Machine-tool reserve increases, $3,500,000.*—The reserve of Government-owned machine tools and industrial manufacturing equipment authorized by the National Industrial Reserve Act of 1948, consists entirely of items selected by the Secretary of Defense. These selections are made from lists of such property declared excess to the needs of the three military departments and other executive agencies.

Each of the military departments maintains a reserve of equipment needed for the current and mobilization requirements of its direct procurement producers. Items selected for the NIER, however, are intended primarily for the expansion of those industries whose support of defense production can be identified, but which do not hold direct military contracts or specific designations as mobilization suppliers (manufacturers of ball bearings, gears, tools, and dies, machine tools, etc.).

The Department of Defense and the Office of Defense Mobilization have advised General Services Administration that excess declarations on production equipment may run as high as 12,000 items per year for the next 3 years and that selections therefrom for the national industrial equipment reserve are estimated at 5,000 items per year.

Since the budget estimates and funds appropriated for the NIER for 1959 were based on selections of only 4,000 items, additional funds will be required to handle the unanticipated increase.

Anticipated increase in selections over previous estimates for 1958 from 400 to 800 items have already been substantially realized. Selections through May 1958 totaled 503, of which over 300 have been made since January 1. The added 1958 costs of $117,000 will be absorbed within current appropriations.

The original estimate of requirements for 1959 as contained in H. R. 11574, based on selection of 400 items, was $503,600. The revised estimate of requirements for 1959, based on selection of 5,000 items, is $4,003,600 of which $2,404,000 or 60 percent is for nonrecurring costs.

Comparative data follows:

	1957 actual	1958 program		1959		
		Initially appropriated	Adjusted	In budget	Revised	Increase
Operations	$413,405	$454,000	$507,000	$468,600	$1,599,600	$1,131,000
Nonrecurring costs	100,000	75,000	139,000	35,000	2,404,000	2,369,000
Total	513,405	529,000	646,000	503,600	4,003,600	3,500,000

The additional $3,500,000 required for the expanded program in 1959 provides for—

1. Increased transportation costs.
2. Installation of new processing areas and enlargement of existing areas.
3. Dehumidification of additional warehouse space at the present processing and storage centers at Burlington, N. J., and Dixon, Ill., and space at a new center to be selected.
4. Purchase of material-handling equipment for use at present centers and the new location.
5. Increase in personnel to process and test equipment received.

Analysis of changes in the inventory is reflected in exhibit B, page 8.

Comparison of workload performed and costs, 1957–59, among the following elements, is presented in exhibit C, page 9:

(1) Transportation of equipment from location at time of selection to NIER processing and storage center. Also includes some transportation in connection with lease activities.

(2) Material receipt and handling. This includes handling of new selections, handling of leased items in and out, handling of equipment within facility, transfers, and disposals.

(3) Processing. This includes analytical testing of operating condition of the equipment and preparation for long-term storage.

(4) Machinery upkeep. Includes operation of dehumidification system, periodic equipment inspection and reprocessing of equipment to extent necessary.

(5) Building maintenance. Maintenance and upkeep of storage facility.

(6) Plans and specifications. Covers cost for additional dehumidification of storage space and additional processing area.

(7) Facility preparation and alteration. Includes major repair and alteration of existing and new facilities, and preparation of new processing areas.

(8) Dehumidification of space. Includes preparation of space and cost of dehumidification equipment.

(9) Handling and testing equipment.

Additional travel to storage and other sites will be required under the expanded program. An increase of $6,000 in the limitation placed on such expenses in the regular 1959 act is requested.

Exhibit B

OE, PGS—National industrial equipment reserve—analysis of inventory changes 1957, 1958, and 1959

	Actual, 1957	Estimated, 1958	Estimated, 1959
INVENTORY			
Opening inventory:			
Tonnage	7,833	9,683	11,883
Items	6,148	6,553	5,433
Returned from lease:			
Tonnage	360	600	300
Items	90	80	30
New selections:			
Tonnage	1,645	2,800	20,000
Items	425	800	5,000
Disposals and transfers:			
Tonnage	−155	−1,200	−450
Items	−110	−2,000	−1,000
Closing inventory:			
Tonnage	9,683	11,883	31,733
Items	6,553	5,433	9,463
PROCESSING AND TESTING			
Processed during fiscal year:			
Tonnage	2,306	2,200	5,400
Items	516	550	1,350
Total processed at end of fiscal year and still in inventory:			
Tonnage	8,409	9,409	14,359
Items	6,287	4,837	5,187
Backlog unprocessed:			
Tonnage	1,274	2,474	17,374
Items	266	596	4,276

Exhibit C

OE, PBS—National industrial equipment reserve—Performance and comparative costs, 1957, 1958, 1959

	1957 actual			1958 estimated			1959 estimated		
	Number of units	Unit cost	Total cost	Number of units	Unit cost	Total cost	Number of units	Unit cost	Total cost
OPERATIONS									
(1) Transportation			$61,229			$110,600			$770,200
Tons	1,802	$33.98		2,800	$39.50		20,000	$38.51	
Items	425	144.06		800	138.25		5,000	154.04	
(2) Material receipt and handling			71,986			75,400			146,720
Tons	11,494	6.26		12,000	6.28		31,600	4.64	
Items	3,424	21.02		3,500	21.54		9,200	15.95	
(3) Processing			202,584			220,000			496,700
Tons	2,306	87.85		2,200	100.00		5,400	91.98	
Items	516	392.60		550	400.00		1,350	367.93	
(4) Machinery upkeep			32,493			36,000			45,760
Tons	7,080	4.59		8,459	4.26		21,808	2.10	
Items	5,410	6.00		5,562	6.47		7,448	6.14	
(5) Buildings maintenance			45,113			65,000			140,220
Square feet	314,888	.14		340,588	.19		839,990	.17	
Total recurring costs			413,405			507,000			1,599,600
NONRECURRING COSTS									
(6) Preparation of plans and specifications for additional D. H. storage and processing areas						40,000			
(7) Facility preparation and alteration									620,000
(8) Dehumidification of space			100,000			75,000			1,409,000
(9) Material handling and testing equipment						24,000			375,000
Total nonrecurring costs			100,000			139,000			2,404,000
Total costs			513,405			646,000			4,003,600
Supplemental estimate									3,500,000

Mr. JONAS. Mr. Holtz probably has a statement he would like to make.

Mr. HOLTZ. I don't have a formal statement. When we were here in February, Mr. Floete told you he had attended a meeting over in the Department of Defense, at which time they indicated that there would be a substantial increase in the number of machines that were going to be transferred to us out of the Department of Defense reserves or out of their excess.

About 2 weeks after we were here, we got formal notice that, instead of the 600 or so that we had used as a basis for our presentation in February, the figure would be on the order of 5,000.

The basis of our request for supplemental appropriation is built around that fact. I know you are all aware, too, that the scope of this program is something that GSA does not control. This originates in the Department of Defense; and, in order to be sure that someone could answer any questions with respect to what happens in the early stages of this thing, I have asked Mr. John Williams and Mr. Jim Nash from the Department of Defense to be here available for questioning

The fact of the matter is that when these selections are made, we are required under Public Law 883 of the 80th Congress, the act which created the national industrial equipment reserve, to accept certain responsibilities. That is the custody and care of the tools that come out of this.

Mr. THOMAS. It is my understanding these people are no more than a service agency.

Mr. HOLTZ. That is correct. We are on the end of this line. What we are told to do, we are obliged to do; and on that basis we are obliged to come here and ask you for the money to pay for what we are directed under the law to do. These selections are made by the Department of Defense. When they are offered to us something has to be done with them. We are here from my own shop to defend the figures that we are presenting as the cost of this operation but with respect to the philosophy behind it that is something we have no control over.

Mr. JONAS. What is the long-range objective?

Mr. HOLTZ. With respect to the number of tools?

Mr. JONAS. Acquisitions of tools.

Mr. HOLTZ. I have asked that same question myself, sir, and I do not know. That is the kind of question I think our friends from the Department of Defense are perfectly qualified to answer. These tools are generated out of military or departmental excess. As these tools come in to them, if they are not required for a foreseeable program within the various military departments, they are declared excess. At that time some portion of those tools are selected for long-term storage.

Mr. THOMAS. They have their own program, too.

Mr. HOLTZ. They have a departmental reserve, that is correct, sir.

To be specific in reply to your question, Mr. Jonas, I would like to go through what makes up this $3.5 million total we are asking as an increase. It starts out with personnel services, the increase is $277,800; $6,000 increase in travel, $707,300 for transportation costs, $500 for communications; $35,000 for rents and utilities; $200 for

printing; $2,049,300 for contractural services—and I will break that down further to answer your question—supplies, $30,900; handling equipment, $375,000; grants, $18,000. The sum of those items is $3,500,000.

The $2,049,300 is broken down into $620,000 for building repairs, site improvements and processing areas; $19,100 is for guard service; $36,200 is for unloading; $1,374,000 is for dehumidification.

The dehumidification is to be applied partially to existing warehouses, warehouses that we now have, the one in New Jersey and the one in Dixon, Ill. Because of this influx of tools we are presently having to go out and develop another warehouse for this thing. We are currently thinking and have gone pretty far toward selecting a site in Indiana, a Military Establishment that is being declared excess. As of today I think it can be said that requests have gone out which will formalize our use of some of that space; it has all been examined; 500,000 square feet of the dehumification will be at that installation; 388,610 square feet will be the 2 existing sites. The estimated cost is $1,374,000.

Mr. JONAS. I understand you have run out of storage space.

Mr. HOLTZ. We are about to.

SELECTION OF EQUIPMENT FOR RETENTION

Mr. JONAS. You have to acquire new storage facilities to take care of the prospective increase in the tools that you take over.

Mr. HOLTZ. That is right.

Mr. JONAS. These tools and this equipment are now in Army or military storage; is that right?

Mr. HOLTZ. I do not think it is in military warehouses. It is coming out of contractors' plants. As contracts are terminated, as I understand the process, the military people examine that list of tools themselves to determine whether they have a mobilization requirement, a firm mobilization requirement, or a foreseeable requirement for it. They have to divest themselves of those for which they cannot justify retention in their own departmental reserve. These tools are over and above that. Certainly not all of them will come into our reserve. There is a selective process with respect to those that are ultimately going to be transferred to us.

Mr. JONAS. What will happen if you did not take them?

Mr. HOLTZ. I expect they would be sold on the market.

Mr. JONAS. You say the bulk of these tools are not in storage but they are in use at the present time on jobs that are under contract?

Mr. WILLIAMS. This equipment that is declared excess can come from two sources. Termination of a military contract and would be in a contractor's facilities, or it could come from a central storage site of the military departments as they review their programs in the light of new strategic concepts.

Mr. JONAS. Can you give us an idea as to what percentage comes from each of those classifications?

Mr. WILLIAMS. No, sir.

Mr. JONAS. The reason I would like that information is I cannot see much advantage in taking this equipment out of a military warehouse where guard service is already provided, where the building is already available, and paying transportation charges to some new

location acquired by GSA at which site you will have to provide guard service and all of the other supplemental services that go with safeguarding this equipment. That does not seem to me to be a very efficient and economical operation.

Mr. THOMAS. If he does not know where it is coming from, how does he arrive at this estimate?

Mr. JONAS. He has to have some basis for the estimate.

Mr. THOMAS. One of the big items of the estimate is transportation and handling charge.

BASIS FOR DEPARTMENT OF DEFENSE DETERMINATION OF 5,000 MACHINE TOOLS

Mr. WILLIAMS. I can cast some light on the 5,000 figure. In 1956 and 1957 and prior years the type of excess equipment that was generated by the military departments was primarily the type that was specialized single purpose for a specific military end item or it was of a type of age and condition that it had served its useful purpose.

With the changes in the military concept and the clearing of the excess property, it appeared as though in future years the type of property that would be generated would be more serviceable and more of a general type. We felt we needed some guidance as to the quantities of equipment that should properly be included in the national industrial equipment reserve. We wrote to the Office of Defense Mobilization and requested such guidance.

The Office of Defense Mobilization then came back and asked us to obtain for them some figures relative to the expected quantities. This is a pretty difficult thing to do, to forecast for a period of 12, 24, or 36 months what is going to be excess, because excessing is something that happens only at the time of the review.

Nevertheless, we did conduct an investigation or query of the departments. It came to us as about 12,000 items for 1958.

On the basis of the 12,000, we started to look at the different types of equipment based on past experience. That is, what percentage of a thousand items would be special for military, what quantities would be in such condition that they should not be retained, and how many of them were manufactured in years back so that they were obsolescent for any particular utilization in the future.

From that particular review, it appeared as though the quantity might be in the neighborhood of 5,000 items. In breaking down this 5,000 items a review was made of the types and quantities of tools that were currently available in the civilian economy. Those percentages were set up for those particular categories.

There was a review made by technicians of General Services Administration, Department of Commerce, and the Department of Defense as to the specific types which each of these categories which were the most commonly used and which ones and the percentage of selections in that respect.

On the basis of that, the 5,000 figure was developed. When this was discussed at the meeting with ODM, using the predetermined figures and the percentages, it was explained that it was doubtful in our mind that there would be sufficient tools in all of these categories to meet this overall 5,000 figure.

Again, all I am saying is this was a guidance and not a specific figure.

INCREASED WORKLOAD

Mr. JONAS. What caused the estimate to go up from 400 items to 5,000?

Mr. WILLIAMS. Because of the change in types of property that is being excessed by military departments, a change from special-type machine tools that were designed specifically for a military item to the general-type items. That is all.

Mr. JONAS. Do you know what the overall objective is of the program?

Mr. WILLIAMS. All I can say relative to an overall objective is "No," there is no specific figure but I think that our past experience in World War II—I was well familiar with that—and also Korea, we have never found ourselves with enough machine tools to meet our requirements. This is the product, this is the item that has always hampered us in our expansions. We have always fallen short of this particular commodity.

Mr. JONAS. How long have we been acquiring this reserve? Is it since 1948?

Mr. WILLIAMS. Since the passage of the law; 1948.

Mr. JONAS. I know we have leased some of this equipment. Have we sold any from the reserve?

Mr. WILLIAMS. No, sir; we only dispose of items that are in the reserve. I would like to point out that the proof of the usefulness of this reserve, I think, can be very well demonstrated by reviewing the types of property, quantities available at the beginning of Korea, and the actual utilization of these items by industry during Korea.

Mr. THOMAS. Will you yield for a moment?

Mr. JONAS. Yes.

Mr. THOMAS. In our regular hearings on the independent offices bill for fiscal year 1959, we put into the record excerpts from the Wall Street Journal when we had our old, distinguished friend here, Mr. Gordon Gray. The article we read into the record showed the Army was in process of selling 15,000 pieces of machinery, not in tons but pieces or tools. That could have been 30,000 tons or no telling how many. It was on the theory that they were obsolescent.

Did I understand you to tell Mr. Jonas the Army had not disposed of any?

Mr. WILLIAMS. No, sir.

Mr. THOMAS. I beg your pardon. I misunderstood you. That statement certainly would not jibe with the facts.

Mr. WILLIAMS. I can assure you Army, Navy, and Air Force have all disposed of property.

Mr. JONAS. I did not ask that. I asked if any had been disposed of from this reserve.

Mr. WILLIAMS. We cannot acquire tools for this reserve and the only out is either through utilization or declaring them excess and disposing of them because they are obsolete or their condition is such——

Mr. JONAS. They are declared excess before they come into the reserve by the service—Army, Navy, or Air Force. After it is de-

cleared excess to the needs of that service and excess to the mobilization needs of that service, then it goes into this reserve; is that not correct?

Mr. WILLIAMS. That is correct; if it is of an appropriate type, not obsolete, and in good condition.

Mr. JONAS. You do acquire the property in that manner?

Mr. WILLIAMS. Yes.

DISPOSAL OF RESERVE TOOLS

Mr. JONAS. Do you have any right to dispose of any and have you disposed of any other than by lease?

Mr. WILLIAMS. Yes.

Mr. HARLAN. The answer is "yes."

Mr. JONAS. To what extent?

Mr. HARLAN. Those tools are reviewed periodically by a group appointed by the Department of Defense. Some of them are declared surplus; whereas they might have been useful when put in, they have since become obsolete, so they are declared obsolete and turned over to the Federal Supply Service for disposal. We have gotten rid of about 2,000 of those in the last year.

Mr. HOLTZ. Through December 31, 1957, there had been 39,436 items brought into it. Out of that, as a result of review, constant review, one reason or another, 26,457 have been disposed of. There were 8,238 transferred to the military.

Mr. JONAS. You mean they reclaimed that many? In effect, it amounts to that?

Mr. HOLTZ. Yes. So, on December 31, 1957, the net machine tools in the inventory was 4,741.

Mr. JONAS. 4,741 items?

Mr. HOLTZ. Items.

Mr. JONAS. Not tons, but items?

Mr. HOLTZ. Items.

Mr. JONAS. In the entire reserve?

Mr. HOLTZ. Yes; in this tool reserve.

ADDITIONAL ACQUISITION EXPECTED IN 1958

Mr. JONAS. Now, you expect to acquire 5,000 more in this next fiscal year?

Mr. HOLTZ. We are told that many are going to be transferred to us. It is possible.

Mr. JONAS. That is what you are trying to make provision for?

Mr. HOLTZ. That is correct.

Mr. JONAS. Do you know what type of equipment this is—what sort of tools?

Mr. HOLTZ. They are all machine tools as such. They are metal-cutting lathes, multiple-spindle tools, largely heavy metal processing equipment.

Mr. JONAS. How would you know you had to acquire a new warehouse if you did not know?

Mr. HOLTZ. We know in general.

WAREHOUSE SPACE

Mr. JONAS. What happened to the warehouse space vacated when you disposed of the 26,000 items?

Mr. HOUSTON. Over the 10 years this program has been in effect we have operated in seven locations. As we required space we activated warehouses and as the inventory has been reduced we have reduced the number of operations.

Mr. JONAS. Have you released some warehouse space?

Mr. HOUSTON. Yes, sir.

Mr. JONAS. That you had under lease or were renting?

Mr. HOUSTON. We have always operated in Government-owned space otherwise excess to some other need. We have never built or acquired a warehouse specifically for this purpose.

Mr. HOLTZ. We are down to the two, the one at Dixon and at Burlington, N. J., and this third one we are going to activate is at Jeffersonville, Ind.

Mr. JONAS. We have gone down from 39,000 items to 4,741. It looks as if you were getting ready to liquidate this program. What accounts for the sudden turnabout?

Mr. MEDLEY. There never was 39,000 in inventory at any one time.

Mr. JONAS. 26,000 disposed of.

Mr. HOLTZ. There never was that many at any one time. That is total cumulative input. The other is cumulative outgo. I think it is fair to say also that some items got into that early reserve that were probably not truly machine tools. They were tools but not machine tools in the sense that we try to keep this inventory today. They were small items.

COST OF PROGRAM 1949–58

Mr. JONAS. Thank you.

Mr. YATES. What is the total cost of this program since 1948?

Mr. HOLTZ. I cannot answer that. I will get it for the record.

(The information referred to follows:)

Cost of national industrial equipment reserve program, 1949–58

1949	$806,674	1955	$298,340
1950	846,730	1956	366,120
1951	539,203	1957	513,405
1952	317,047	1958	[1] 646,000
1953	221,923		
1954	241,432	Total	4,796,874

[1] Subject to year-end adjustment.

Mr. YATES. Are there any other questions?

Mr. THOMAS. I suggest that we have the clerk prepare an investigation on the entire machine tool industry from the armed services' point of view and from the point of view of the General Services Administration and see what the unit cost for each service is and see what the rate of obsolescence is. We will again refer to the article in the Wall Street Journal and see if we are not paying a whole lot of rent on a whole lot of tools that perhaps should have been disposed of 4 or 5 years ago by the armed services and General Services Administration, too. The whole subject needs looking into.

Mr. YATES. I think the point is well taken.

Thank you very much, gentlemen.

Expenses, Supply Distribution

Mr. Yates. Put in the record pages 16 and 17 of the justification relating to the item of $177,000 for "Expenses of supply distribution."

GENERAL SERVICES ADMINISTRATION

Supplemental Estimate of Appropriation, 1959

APPROPRIATION LANGUAGE

"Expenses, Supply Distribution

"For an additional amount for 'Expenses, supply distribution,' $177,000."

GENERAL STATEMENT

This proposed supplemental appropriation is needed to pay costs in 1959 for wage-board rate increases which have been granted between July 1, 1957, and May 4, 1958.

The budget estimate for this appropriation item for 1959 excluded amounts for wage-board rate increases effected during 1958 and those to be effected during 1959. A supplemental appropriation is requested at this time to cover the increased cost during 1959 due to rate increases effected from July 1, 1957, through May 4, 1958. Cost in 1959 for increases to be effected from May 5 through June 30, 1958, which will include New York as well as costs for such further increases as may be effected during that year, will require future supplemental appropriations.

Exhibit A which follows sets forth by locality the cost in 1959 for rate increases effected July 1, 1957, through May 4, 1958, for employees financed by "Expenses, supply distribution," plus 6½ percent for payments to the civil-service retirement fund, a total of $177,000. This provides for employees payrolled directly from this appropriation and employees under the buildings management fund engaged in maintenance of supply depot space, the cost of which is billed to this item.

Exhibit A

EXPENSES, SUPPLY DISTRIBUTION

Cost in 1959 of wage-board increases effected July 1, 1957, through May 4, 1958

Locality	Effective date of new schedules	Average hourly increase	Employees affected		Full year cost in 1959
			Direct	Indirect	
Boston, Mass	Nov. 17, 1957	$0.1144	36	5	$9,800
Washington, D. C	Apr. 6, 1958	.1344	190	16	57,600
Atlanta, Ga	July 14, 1957	.1048	74	12	18,700
Fort Worth-Dallas, Tex	Apr. 6, 1958	.1076	63	11	16,600
Denver, Colo	May 4, 1958	.1560	69	11	26,000
San Francisco, Calif	Dec. 15, 1957	.1544	50	10	19,300
Puget Sound, Wash	Jan. 26, 1958	.1408	54	10	18,700
Nationwide average and total		.1312	536	75	166,700
Payments to retirement fund, at 6½ percent					10,800
Total					177,500
Rounded for this estimate to					177,000

Note.—Table excludes average hourly increase of $0.1308 for New York, N. Y., which was effective June 1, 1958, and applies to 93 employees, or an increased cost in 1959 of $26,947.

Mr. Yates. Tell us what that is for.

Mr. Medley. That item is similar to the wage-board increase in the previous appropriations discussed, Mr. Chairman. It covers those employees in our supply warehouses which are paid at prevailing rates and are therefore wage-board employees.

Mr. YATES. Is that true with respect to the item that appears on pages 19 and 20 which may go into the record at this point?

Mr. MEDLEY. Yes, sir.

GENERAL SERVICES ADMINISTRATION

SUPPLEMENTAL ESTIMATE OF APPROPRIATION, 1959

APPROPRIATION LANGUAGE

"OPERATING EXPENSES, NATIONAL ARCHIVES AND RECORDS SERVICE

"For an additional amount of 'Operating expenses, National Archives and Records Service,' $36,000."

GENERAL STATEMENT

This proposed supplemental appropriation is needed to pay costs in 1959 for wage-board rate increases which have been granted between July 1, 1957, and May 4, 1958.

The budget estimate for this appropriation item for 1959 excluded amounts for wage-board rate increases effected during 1958 and those to be effected during 1959. A supplemental appropriation is requested at this time to cover the increased cost during 1959 due to rate increases effected from July 1, 1957, through May 4, 1958. Cost in 1959 for increases to be effected from May 5 through June 30, 1958, which will include New York as well as costs for such further increases as may be effected during that year, will require future supplemental appropriations.

Exhibit A, which follows, sets forth by locality the costs in 1959 for rate increases effected July 1, 1957, through May 4, 1958, for employees financed by operating expenses, National Archives and Records Service, plus 6½ percent for payments to the civil-service retirement fund, a total of $36,000. This provides for employees payrolled directly from this appropriation and employees under the buildings management fund engaged in maintenance of record center space, the cost of which is billed to this item.

EXHIBIT A

OPERATING EXPENSES, NATIONAL ARCHIVES AND RECORDS SERVICE

Cost in 1959 of wage-board increases effected July 1, 1957 through May 4, 1958

Locality	Effective date of new schedules	Average hourly increase	Employees affected		Full year cost in 1959
			Direct	Indirect	
Boston, Mass	Nov. 17, 1957	$0.1144		1	$238
Philadelphia, Pa	Mar. 9, 1958	.1520		4	1,265
Washington, D. C	Apr. 6, 1958	.1344	58	21	22,084
Atlanta, Ga	July 14, 1957	.1048	2	7	1,962
St. Louis, Mo	May 4, 1958	.0804	4	17	3,512
Fort Worth-Dallas, Tex	Apr. 6, 1958	.1076	5	2	1,567
Denver, Colo	May 4, 1958	.1560	2	3	1,622
San Francisco, Calif	Dec. 15, 1957	.1544	2	3	1,605
Puget Sound, Wash	Jan. 26, 1958	.1408		1	293
Nationwide average and totals		.1244	73	59	34,148
Payments to retirement fund, at 6½ percent					2,219
Rounded for this estimate to					36,367 36,000

NOTE.—Table excludes average hourly increase of $0.1308 for New York, N. Y. which was effective June 1, 1958, and applies to 20 employees or an increased cost in 1959 of $5,795.

Mr. YATES. Thank you very much, gentlemen.

WEDNESDAY, JULY 2, 1958.

VETERANS' ADMINISTRATION

WITNESSES

SUMNER G. WHITTIER, ADMINISTRATOR
A. H. MONK, ACTING ASSISTANT DEPUTY ADMINISTRATOR
A. ROSENTHAL, CONTROLLER
J. D. BAKER, BUDGET OFFICER AND ASSISTANT CONTROLLER

DEPARTMENT OF MEDICINE AND SURGERY

DR. WILLIAM S. MIDDLETON, CHIEF MEDICAL DIRECTOR
R. W. WISE, DIRECTOR, BUDGET SERVICE

DEPARTMENT OF VETERANS BENEFITS

F. J. PETRAITIS, STAFF ASSISTANT TO CHIEF BENEFITS DIRECTOR
P. N. BROWNSTEIN, DIRECTOR, LOAN GUARANTY SERVICE
J. D. SHYTLE, JR., ACTING CONTROLLER

Mr. YATES. We have with us Mr. Whittier, the eminent Administrator of the Veterans' Administration. Mr. Whittier, do you have a statement for us?

Mr. WHITTIER. Yes; I do, Mr. Yates.

Mr. YATES. You have 2 items in House Document No. 394 on page 9 and they will be made part of the record at this point.

(The items are as follows:)

"VETERANS' ADMINISTRATION

"GENERAL OPERATING EXPENSES

"For an additional amount for 'General operating expenses', $5,269,000; *and the limitation under this head in the Independent Offices Appropriation Act, 1959, on the amount available for expenses of travel of employees, is increased by $200,000.*"

The proposed supplemental appropriation is for the administrative expenses of increased loan guaranty and direct loan activity, resulting from enactment of the Emergency Housing Act of 1958 (Public Law 85–364, approved April 1, 1958).

"INPATIENT CARE

"For an additional amount for 'Inpatient care', $3,486,000."

This proposed supplemental appropriation is to cover the additional cost during fiscal year 1959 of wage-board pay increases granted between November 18, 1957, and May 2, 1958.

Mr. WHITTIER. Mr. Chairman and members of the committee, we are here today to ask your favorable consideration of our additional appropriation needs of $8,755,000 for the 1959 fiscal year. This amount is composed of $3,486,000 for the "Inpatient care" appropriation and $5,269,000 for the appropriation "General operating expenses."

The amount requested for "Inpatient care" is needed to pay the fiscal year 1959 cost of wage board increases approved between November 17, 1957, and May 2, 1958. During this period schedules involving 12,951 employees at 89 hospitals were favorably considered. The fiscal year 1959 cost of these approvals amounts to $3,486,000. Wage board increases are not included in budget estimates until the revised rates

have been approved; therefore, the regular budget for 1959 made no provision for this added cost. Supplemental appropriations are required to meet the additional needs for this purpose as they arise. Since prompt payment of these increased allowances is essential to employee welfare and since payments are dependent upon fund availability for that purpose, your favorable action is urgently requested.

Subsequent to our appearance before you with respect to our fiscal year 1959 appropriation requirements, the Emergency Housing Act of 1958 (Public Law 85–364) was enacted. The provisions of this act directly affect our loan guaranty activities and a considerable increase in workload is already being experienced.

The recent trend in several major workload categories is as follows:

Workload	March	April	May	Percent increase May over March
VA housing starts	3,092	4,785	6,043	95.4
Appraisal requests:				
Proposed units	8,406	24,800	29,170	247.0
Existing units	3,095	6,726	12,157	292.8
Applications	6,573	5,944	8,705	32.4

We are anticipating increased production per employee in the accomplishment of this higher load. However, the large volume increase requires an additional 872 personnel and $5,269,000.

We have submitted the required supporting material for these supplemental appropriation requests and will be glad to furnish you with any additional information you may desire.

Incidentally, I might introduce some people whose jobs have changed since the last time. Mr. Kelsey retired and Mr. Aaron Rosenthal is the new controller. Mr. Brownstein is the new head of Loan Guaranty. Mr. Sweeney got a bigger job and left us. Mr. Monk has not been up here since he has been Second Deputy. You know the rest.

General Operating Expenses

Mr. Yates. Pages 5, 6, and 7 may go into the record.

General Operating Expenses, VA, $5,269,000

Subsequent to presentation of the fiscal year 1959 budget estimates, currently before the Congress, fund requirements of this appropriation have been increased substantially by the enactment of the Emergency Housing Act of 1958 (Public Law 85–364, April 1, 1958). This legislation, designed to stimulate residential construction will increase requirements of the loan guaranty program an estimated $5,269,000 over the prior estimate. Provisions of the act primarily contributing to this increased need are as follows:

1. Extends the loan guaranty program for World War II veterans until July 25, 1960.
2. Extends the direct loan program until July 25, 1960, and increases the maximum amount of such loans from $10,000 to $13,500.
3. Authorizes the Administrator, with approval of the Secretary of the Treasury, to adjust the rate of interest authorized for VA loans (rate was increased from 4½ to 4¾ percent effective April 4, 1958).
4. Permits FNMA to purchase VA guaranteed home loans at par if the original principal obligations does not exceed $13,500 ($1 billion authorized for this purpose).

5. Authorizes discontinuance of 2 percent downpayment requirement on direct and guaranteed loans.

As of April 15, 1958, 2 weeks following enactment of the housing legislation, 2,495 new GI housing starts were reported which, at this first-half month rate, would result in a 62 percent increase in April over the 3,092 starts recorded in March. The mid-month figures also indicated an upsurge in appraisal requests for existing houses. The April 15 figure of 2,524 requests, if maintained will result in a better than 60 percent increase over the March total of 3,095.

A summary comparison of loan guaranty program workloads, performance rates, and man-year requirements, as estimated before and after the new housing legislation, is presented on the following page.

Loan-guaranty program	Fiscal year 1959 budget to Congress			Fiscal year 1959 revised requirements			Increase (+) decrease (−)
	Work units	Rate	Man-years	Work units	Rate	Man-years	
Office of the Chief			220			280	+60
Construction specialists			10			60	+50
Appraisal function:							
Appraisal requests received	95,000	4.40	206	345,000	3.63	617	
Plus leave allowance			26			81	
Total man-years			232			698	+466
Loan processing function:							
Guaranty-insured loans closed (automatic)	13,000	2.15	14	55,000	2.00	54	
Guaranty-insured loans closed (prior appropriation)	42,500	4.12	87	170,000	3.20	268	
Subtotal	55,000		101	225,000		322	
Direct loan closed and disbursed	6,606	19.55	64	21,000	30.00	310	
Plus leave allowance			23			75	
Total man-years			188			707	+519
Loan service and claims function:							
Defaults processed	78,130	6.20	239	78,130	4.00	154	
Claims processed	8,705	24.00	103	8,705	16.00	69	
Average number of loans owned	133,000	5.70	373	133,000	4.00	262	
Plus leave allowance			94			63	
Total man-years			809			548	−261
Property management function:							
Property acquisitions	7,580	69.00	258	7,580	78.00	291	
Plus leave allowance			33			38	
Total man-years			291			329	+38
Total man-years			1,750			2,622	+872

Additional fund requirements resulting from the new legislation are specified in detail in the accompanying schedules. A summarized comparison of loan-guaranty program estimates currently before the Congress and those reflecting the effects of the new legislation is as follows:

	In budget	Revised requirements	Increase
Personal services	$9,081,486	$13,605,500	$4,524,014
Employee travel	347,000	520,000	173,000
Other objects	1,605,156	2,177,142	571,986
Total costs	11,033,642	16,302,642	5,269,000

Mr. YATES. I take it you cannot absorb these wage increases in your budget.

Mr. WHITTIER. No, sir.

Mr. YATES. Or any portion of them?

Mr. WHITTIER. No. Everything we can absorb we have absorbed.

COMPARISON OF WAGE INCREASE OF WAGE BOARD EMPLOYEES AND CLASSIFIED EMPLOYEES

Mr. THOMAS. I suggest you put a table in the record at this point showing the wage increases from the inception of the Wage Board Act.

How long has the act been in effect?

Mr. BAKER. Over 2 years.

Mr. THOMAS. Two or two and a half years. You have had five wage increases as I recall. Have a column showing the increases percentagewise every 6 months and the number and the total at the end, and the next column showing the increases of the regular civil-service employees.

Mr. WHITTIER. We will supply that.

(The information referred to follows:)

INCREASES IN TOTAL ANNUAL WAGES AND AVERAGE PER ANNUM WAGE FOR VA WAGE-ADMINISTRATION EMPLOYEES

The following table reflects increases in the total annual wages and average per annum wage paid VA wage-administration employees since they were covered into the wage program, pursuant to Public Law 763, 83d Congress. Immediately prior to their conversion to wage-administration schedules, these employees received the 7½-percent salary increase granted all Federal classified employees by Public Law 94, 84th Congress. Therefore, the average per annum wage of $3,214 in effect after payment of Public Law 94, 84th Congress salary increases has been used as the base to compute the percentage increases shown for the selected points in time. Salary schedules for classified workers remained unchanged between March 13, 1955, the effective date for payment of Public Law 94, 84th Congress salary increases and June 20, 1958, when Public Law 85–462, which authorized salary increases averaging 10 percent for all employees other than wage board, was signed by the President.

Date	Number of wage employees on duty	Total annual wages of wage-board employees on duty	Average per annum wage	Percentage increase in per annum wage (base)	Classified workers (base)
					Percent
Mar. 31, 1955 [1]	36,677	$117,896,009	$3,214		
Dec. 31, 1955	36,903	121,872,995	3,303	+2.8	
June 30, 1956	37,095	126,480,048	3,410	+6.1	
Dec. 31, 1956	37,752	128,803,794	3,412	+6.2	
Mar. 31, 1957	37,903	129,555,008	3,418	+6.3	
Sept. 30, 1957	37,476	133,634,906	3,566	+11.0	
Mar. 31, 1958	37,158	137,170,311	3,692	+14.9	[2] 10

[1] Wage data based on rates in effect after payment of salary increases granted by Public Law 94, 84th Cong.

[2] Jan. 12, 1958.

Mr. YATES. Do you have anything else, Mr. Whittier?

Mr. WHITTIER. That is our total request.

VOLUME OF GI HOUSING STARTS

Mr. THOMAS. Mr. Yates is impressed with your increased loan guaranty volume.

Mr. YATES. I am, indeed.

Mr. THOMAS. How many housing starts will you have this year compared to last year?

Mr. WHITTIER. I will let Mr. Brownstein speak to that.

Mr. BROWNSTEIN. We expect there probably will be between 1 million and 1.1 million starts this year.

Mr. YATES. After such a slow start in the early months?

Mr. BROWNSTEIN. Yes, sir.

Mr. THOMAS. Was it about 980,000 last year?

Mr. BROWNSTEIN. About 990,000.

Mr. THOMAS. That 1.1 million starts is a better guess than 1 million; is it not?

Mr. BROWNSTEIN. We have gotten through the first 5 months and are under the million rate for this period.

Mr. THOMAS. What is it?

Mr. BROWNSTEIN. It is at about 960,000 for the first 5 months. In May starts were at an annual rate of 1,010,000. We expect there will be acceleration during the latter part of the year.

Mr. THOMAS. For the record, what was the personnel load last year? They practically did no business at all. How much money did we earmark for them last year?

Mr. MONK. About $17.5 million.

Mr. THOMAS. What will you spend during fiscal 1959?

Mr. SHYTLE. The original estimate was $11,033,000 and we now estimate we will spend $16,300,000.

Mr. THOMAS. You will get up to about your 1956 level?

Mr. SHYTLE. Approximately, in total dollars. Employment in 1956 was around 3,400 and we are now estimating about 2,600 for fiscal year 1959.

Mr. BROWNSTEIN. I was speaking of calendar year 1958 when I talked in terms of starts.

Mr. THOMAS. That is the way we operate also when we talk about housing starts.

INPATIENT CARE

Mr. YATES. Inpatient care, pages 1 and 2 will go in the record and inpatient care, page 5.

INPATIENT CARE

(P. 197, the Budget for fiscal year 1959, as amended by S. Doc. 94)

For expenses necessary for the maintenance and operation of hospitals and domiciliary facilities and for the care and treatment of beneficiaries of the Veterans Administration in facilities not under the jurisdiction of the Veterans Administration as authorized by law, including the furnishing of recreational articles and facilities; maintenance and operation of farms; repairing, altering, improving or providing facilities in the several hospitals and homes under the jurisdiction of the Veterans Administration, not otherwise provided for, either by contract, or by the hire of temporary employees and purchase of materials; purchase of one hundred and three passenger motor vehicles for replacement only; not to exceed $400,000 for expenses of travel of employees; uniforms or allowances therefor as authorized by the Act of September 1, 1954, as amended (5 U. S. C. 2131); and aid to State or Territorial homes in conformity with the Act approved August 27, 1888, as amended (24 U. S. C. 134) for the support of veterans eligible for admission to Veterans Administration facilities for hospital or domiciliary care; [$708,902,000:] *$712,388,000: Provided,* That allotments and transfers may be made from this appropriation to the Department of Health, Education, and Welfare (Public Health Service), the Army, Navy, and Air Force Departments, for disbursement by them under the various headings of

their applicable appropriations, of such amounts as are necessary for the care and treatment of beneficiaries of the Veterans Administration: *Provided further*, That the foregoing appropriation is predicated on furnishing inpatient care and treatment to an average of 139,288 beneficiaries during the fiscal year 1959 including members in State or Territorial homes and if a lesser number is experienced such appropriation shall be expended only in proportion to the average number of beneficiaries furnished such care and treatment: *Provided further*, That reimbursements received from non-Federal sources for care and treatment of patients provided by this appropriation shall be credited to miscellaneous receipts of the Treasury, and payments from the departments and agencies of the Government for such care and treatment may be made in advance, or by way of reimbursement, to this appropriation, as may be agreed upon by the Administrator and the head of the department or agency concerned. (*5 U. S. C. 43, 46a–46c, 50, 58–59a, 73b–73c, 75a–75a–1, 78, 78a–1, 84–84c, 118j–1, 118p, 118q, 150, 835–840, 842, 901–957, 2091–2092, 2094, 2121–2123, 2131–2133; 33 U. S. C. 857; 38 U. S. C. 701a, ch. 12A (V. R. 1(a), part VII); 71 Stat. 88–90, 91–92, 94, 110–114, 117–118, 122, 123, 130–135, 141–144, 144–145, 145–152, 152–154, 154–155, 157, 172–173, 472, 491–494; 41 U. S. C. 5; 42 U. S. C. 213; Independent Offices Appropriation Act, 1958; General Government Matters Appropriation Act, 1958.*)

Appropriated 1958, $708,000,000 Estimate 1959, $712,388,000

JUSTIFICATION OF REVISED ESTIMATE, FISCAL YEAR 1959

The budget for fiscal year 1959, as amended, provides funds for the payment of wage-rate salaries that had been approved through November 17, 1957. In the period November 18, 1957, to May 2, 1958, additional wage-rate increases have been approved pursuant to law (Public Law 763, 83d Cong.), which will cost $3,486,000 during fiscal year 1959. This cost represents the approval of 89 different schedules.

Provision of funds to cover these additional costs at this time will facilitate more orderly planning of fiscal administration of hospital operations during fiscal year 1959.

Mr. YATES. Thank you, gentlemen.

WEDNESDAY, JULY 2, 1958.

HOUSING AND HOME FINANCE AGENCY

WITNESSES

PUBLIC HOUSING ADMINISTRATION

JOHN D. CURRIE, ACTING COMMISSIONER
B. W. RUFFNER, DIRECTOR OF BUDGET

FEDERAL NATIONAL MORTGAGE ASSOCIATION

J. STANLEY BAUGHMAN, PRESIDENT
WALTER C. HAND, BUDGET OFFICER

N. J. EISEMAN, ACTING AGENCY BUDGET OFFICER, HOUSING AND HOME FINANCE AGENCY

Mr. YATES. We will put in the record at this point the items pertaining to the Housing and Home Finance Agency on pages 10 and 11 of House Document No. 394.

"HOUSING AND HOME FINANCE AGENCY

"FEDERAL NATIONAL MORTGAGE ASSOCIATION

"LIMITATION ON ADMINISTRATIVE EXPENSES, FEDERAL NATIONAL MORTGAGE ASSOCIATION

"The limitation under this head in title II of the Independent Offices Appropriation Act, 1959, on administrative expenses of the Association, is increased by $800,000; and the limitation thereunder on expenses of travel, is increased by $50,000."

The requested increase in the limitation is to permit employment of additional staff to handle the projected increased mortgage purchase activity resulting from the enactment of Public Law 85–364, approved April 1, 1958.

"PUBLIC HOUSING ADMINISTRATION

"ANNUAL CONTRIBUTIONS

"For an additional amount, fiscal year 1958, for 'Annual contributions', $4,300,000."

This proposed supplemental appropriation for the fiscal year 1958 is necessary for the payment of contractual contributions by Public Housing Administration to local housing authorities in accordance with law. The estimate is based upon a detailed analysis of the subsidy requirements.

"LIMITATION ON ADMINISTRATIVE AND NONADMINISTRATIVE EXPENSES, PUBLIC HOUSING ADMINISTRATION

"The limitation in the second proviso under this head in title II of the Independent Offices Appropriation Act, 1959, on certain expenses of the Public Housing Administration, is increased by $750,000."

The requested increase in the limitation on nonadministrative expenses for the fiscal year 1959 is required to provide adequate supervision of construction for the additional units which will be started as a result of the President's recent directive to accelerate housing construction.

FEDERAL NATIONAL MORTGAGE ASSOCIATION

Mr. YATES. Mr. Baughman, are you the witness on behalf of FNMA?

Mr. BAUGHMAN. Shall we take FNMA first?

Mr. YATES. Yes.

Mr. BAUGHMAN. I have a statement, Mr. Chairman, I would like to read, which is very brief.

Mr. YATES. All right.

Mr. BAUGHMAN. Mr. Chairman, I appreciate having this opportunity to discuss with you and with your committee the reasons which, in my opinion, justify the request made by FNMA for an additional administrative expense authorization for fiscal year 1959.

Public Law 85–364, an act to stimulate residential construction, which was approved April 1, 1958, increased FNMA's authority to issue commitments to purchase and to purchase mortgages under its special assistance functions to the extent of $1,550 million outstanding at any one time. This authorization included (1) a wholly new program of $1 billion for commitments and purchases of FHA-insured and VA-guaranteed mortgages of $13,500 or less covering low and moderate priced housing on which construction had not commenced at the time application was made for FNMA's commitment; (2) an increase of $500 million in programs to finance selected types of federally insured or guaranteed home mortgages and such mortgages generally, when and as directed by the President; and (3) a

$50 million expansion of the Association's special assistance program for mortgages insured under title VIII of the National Housing Act, as amended.

As a consequence of the additional authority and added responsibilities imposed upon the Association by Public Law 85–364, FNMA's workload under its special assistance functions during fiscal year 1959 will be substantially greater than our initial estimates reported to your committee at the time we appeared in behalf of the 1959 request. The impact of this increased workload would be greater if it was not offset in part by a currently reduced trend in FNMA's secondary market activities. I will comment on each program in more detail in the ensuing paragraphs of my statement.

SPECIAL ASSISTANCE FUNCTIONS

When the Association's original estimates for fiscal year 1959 were submitted, provision was made for administering only those programs that had theretofore been authorized and for such additional FNMA authority as was embodied in the President's housing legislative program recommended for enactment during the current session of the Congress. The impact on the Association of the additional activities authorized by Public Law 85–364 become strikingly apparent when currently estimated activities for fiscal year 1959 are compared with those shown in the original estimates. For example, mortgage purchases are now estimated to total $1,050 million, as contrasted with the original estimated program of only $321.5 million, an increase of $728.5 million, or 226.6 percent; current estimates contemplate that mortgage commitments will be issued in the amount of $931.5 million as compared with the original estimate of $315.5 million, an increase of $616 million, or 195.3 percent; the dollar volume of mortgages to be serviced will be increased from our initial estimate of $310.3 million to $695.5 million, an increase of $385.2 million, or 124.1 percent, and the number from 26,700 to 57,200, an increase of 30,500, or 114.2 percent. A portfolio increase of such magnitude means, of course, that adequate measures must be taken to protect the Government's expanded investment in that portfolio. Thus, the very considerable expansion in FNMA's workload under the special assistance functions indicates a compelling need for a rather substantial increase in administrative expense authorization under limitation to assure the proper execution of these functions. These needs embrace all categories of expenditures. A table showing a comparison of our original and revised estimated workload activities under the special assistance functions during fiscal year 1959 accompanies this statement.

SECONDARY MARKET OPERATIONS

As previously stated, we currently estimate that the overall volume of the Association's activities under its secondary market operations during fiscal year 1959 will be somewhat less than our initial estimates and, as a consequence, decreased administrative expense requirements for this phase of FNMA's operations will partially offset the increased needs under the special assistance functions.

Mortgage purchases in FNMA's current budget estimates for fiscal year 1959 are reduced from $500 million to $300 million, a reduction

of $200 million from the original estimates, or 40 percent; mortgage sales are estimated to increase from $50 million to $300 million, an increase of $250 million, or 500 percent; the portfolio at the end of the fiscal year is estimated to be reduced from $2,283 million to $1,338 million, a reduction of $945 million, or 41.4 percent—thus, the average dollar volume of mortgages to be serviced during the year will be reduced from $2,093.1 million to $1,363.1 million, a reduction of $730 million or 34.9 percent, and the number from 189,150 to 131,000, a reduction of 58,150, or 30.7 percent.

The accompanying table compares our original and revised workload activity estimates covering the secondary market operations during fiscal year 1959.

ADMINISTRATIVE EXPENSES

The net reduction in mortgage activity under the secondary market operations during fiscal year 1959 is estimated to effect a saving of $500,000 in administrative expense requirements initially projected for this phase of the Association's operations. However, the estimated increase in mortgage activities under FNMA's special assistance functions is estimated to increase the administrative expense requirements for that operation by $1,300,000. Thus, it is estimated that the Association will require a net increase of $800,000 in administrative expense authorization for fiscal year 1959. This, however, represents an increase of only 16.8 percent over the original estimates, as compared with an estimated increase of 78.7 percent in the number of mortgage purchases, an increase of 519.1 percent in the number of mortgage sales, a 117 percent increase in new commitment activity, and a decrease of only 5.2 percent in the average number of mortgages in portfolio to be serviced during the year.

I may state, Mr. Chairman and members of the committee, it has always been the Association's policy to hold administrative as well as other expenses to as low a figure as possible consistent with sound administrative practices and these revised estimates reflect that policy.

Workload, percentage of change, and administrative expense comparisons are shown in the attached table.

Thank you.

HOUSING AND HOME FINANCE AGENCY—FEDERAL NATIONAL MORTGAGE ASSOCIATION

Comparison of workload increases with administrative expense estimates

Workload	In President's budget	Revised estimate	Increase or decrease	Percentage of change
Secondary market operations:				
Mortgage purchases	42,000	25,000	−17,000	−40.5
Mortgage sales	4,200	25,000	+20,800	+495.2
Mortgage servicing (average number)	189,150	131,000	−58,150	−30.7
Commitments to be issued	12,500	1,200	−11,300	−90.4
Special assistance functions:				
Mortgage purchases	22,750	90,680	+67,930	+298.6
Mortgage sales	0	1,000	+1,000	0
Mortgage servicing (average number)	26,700	57,200	+30,500	+114.2
Commitments to be issued	20,300	69,975	+49,675	+244.7
Management and liquidating functions:				
Mortgage purchases	0	0	0	0
Mortgage sales	0	0	0	0
Mortgage servicing (average number)	320,000	320,000	0	0
Commitments to be issued	0	0	0	0
Total all programs:				
Mortgage purchases	64,750	115,680	+50,930	+78.7
Mortgage sales	4,200	26,000	+21,800	+519.1
Mortgage servicing (average number)	535,850	508,200	−27,650	−5.2
Commitments to be issued	32,800	71,175	+38,375	+117.0
Administrative expenses	$4,750,000	$5,550,000	$800,000	+16.8

Mr. THOMAS. Mr. Chairman, may I ask a question at this point?

Mr. YATES. Yes, Mr. Thomas.

Mr. THOMAS. Will you explain why you have to have $800,000 more in view of your workload of 320,000? Your overall functions have been shifted from spot to spot. You have had decreases in everything except the special assistance functions. They have gone up, but when you balance the work out it amounts to the same thing. Why the $800,000 increase?

Mr. BAUGHMAN. I think if you will refer to the last page of my statement, Mr. Thomas, you will see by that statement that they are decreasing is not quite true. Mortgage purchases have gone up 78.7 percent on a consolidated basis.

Mr. THOMAS. Is your table on page 3 correct?

Mr. BAUGHMAN. Page 5.

Mr. THOMAS. I am looking at page 3 of your justifications.

Mr. EISEMAN. That is not a total of the items above even though there are the double lines under it.

Mr. THOMAS. Oh, it is not? I am talking about your workload. I am not talking about your dollars.

Mr. BAUGHMAN. Those are individual programs.

Mr. YATES. What is the comparable figure for last year on the totals?

Mr. BAUGHMAN. I think what we are basing our conclusions on here—we came here for so much money for a certain workload——

Mr. THOMAS. Give us a comparative statement.

Mr. YATES. This is it [indicating].

Mr. THOMAS. That is dollars. I am talking about units of workload. How does your revised estimate compare with 1959?

Mr. BAUGHMAN. These are items of workload at the bottom of the page, "Total, all programs."

Mr. THOMAS. Which figure shows the increase?

Mr. BAUGHMAN. If you will look at "Total all programs," you will see an increase of 50,930 in mortgage purchases.

Mr. YATES. They figured they would only buy 65,000 mortgages, and they got up to 115,000.

Mr. BAUGHMAN. Mortgage sales increased by 21,800.

Mr. THOMAS. Mortgage servicing decreased 27,000.

Mr. BAUGHMAN. And commitments to be issued increased 38,375.

Mr. THOMAS. How much of a percentage increase is that?

Mr. HAND. Each type of workload requires a different degree of staff effort. You can see the net changes in the fourth column.

SECONDARY MARKET OPERATIONS

Mr. YATES. Why are your secondary market operations going down?

Mr. BAUGHMAN. I think the special assistance operations have had an impact on that.

Mr. YATES. In what respect?

Mr. BAUGHMAN. This antirecession emergency legislation that was put through this spring. We issue commitments for mortgages up to $13,500, and we pay above the market in certain instances, and naturally the trend would be in that direction as long as the money is available.

Mr. THOMAS. The law requires that you buy them and that you pay par?

Mr. BAUGHMAN. That is correct. As long as that money is available, the secondary-market operations will go down. And I think there is more money in the mortgage market today than there was 6 months ago.

Mr. YATES. And as a result there is not the need for your secondary market operations that there was last year?

Mr. BAUGHMAN. That is right.

Mr. YATES. Thank you very much, Mr. Baughman.

Mr. BAUGHMAN. Thank you.

PUBLIC HOUSING ADMINISTRATION

ANNUAL CONTRIBUTIONS

Mr. YATES. Now we have an item for the Public Housing Administration.

Mr. CURRIE. I have a statement I would like to read to the committee.

Mr. YATES. You may proceed, Mr. Currie.

Mr. CURRIE. Mr. Chairman and members of the committee, I appreciate this opportunity to appear before your committee to discuss our supplemental fund requirements. We are requesting a supplemental appropriation for payment of annual contributions in fiscal year 1958, and an authorization to increase the limitation on nonadministrative expenses of the low-rent public housing program in fiscal year 1959.

The supplemental appropriation of $4.3 million is required to meet contractual obligations incurred for payment of annual contributions to local housing authorities. During fiscal year 1959, an increase of

$750,000 is required in the limitation on nonadministrative expenses to assure adequate inspection of projects placed under construction as a result of the accelerated construction program.

The Public Housing Administration executes contracts with local authorities, which contain provisions for the payment of annual contributions sufficient to meet interest and amortization requirements on bonds or other obligations issued to finance the development costs of projects.

The supplemental appropriation estimate for the payment of annual contributions, submitted at this time, follows the procedure established in previous years. The estimate of annual contribution requirements, originally submitted by the Administration, was reduced by the Congress. Supplemental estimates are then submitted after actual requirements can be more accurately determined.

During any given fiscal year, many uncontrollable factors tend to change original budget estimates. A review and analysis of fiscal data relating to a number of projects and annual contributions contracts, included in the schedules supporting this supplemental estimate, reveal many of these uncontrollable factors. One major factor appears to be predominant for the projects requiring maximum contributions. Operating expenses are increasing in a greater proportion than income. The significant increases are in the categories of repairs, replacement of equipment, and operating improvements. In many projects, these expenditures absorb all residual receipts, and any large expenditure in any one year may require withdrawals from the approved operating reserve. Therefore, maximum annual contributions may be required during the years following a major expenditure program, in order to recover the reserves.

Some projects require no annual contribution payment. The reasons vary considerably. A number of projects were constructed from appropriated funds and therefore require no subsidy payment; other projects accumulated operating gains in prior years, which were drawn upon for payment of the subsidy. Another group of projects operate without a subsidy since the income earned exceeds all operating expenses.

A number of projects of comparable size receive widely varying annual contributions; these variations can be attributed to a number of factors. Projects which have accumulated the maximum operating reserves, require no additional reserve funds, while other projects with small or no reserve funds must utilize a large portion of residual receipts to build up to the maximum reserve. Another factor accounting for differences in contribution payments is the rental income which varies between locations. The rental income of projects is a reflection of the economic condition of the community, rather than the effectiveness of the local authority management. There also are differences among local authority management in the utilities supplied to tenants. For example, some localities furnish water service only, whereas other localities furnish all utility services with the related high utility expenses.

I will not burden you with further detailed statements in support of this supplemental appropriation, since these are presented in the justification. Our original budget estimate for payment of annual contributions, as submitted to the Congress some 18 months

ago, was $99 million. The revised estimate exceeds the original estimate by only $300,000. This exceeds the funds currently appropriated by the Congress by $4.3 million, and is the amount of the requested supplemental appropriation.

The second of our supplemental requirements does not involve an appropriation of funds, only an increase in the authorization to expend receipts of the program. These receipts are fixed fees paid by local authorities to the Administration for the reimbursement of salaries and expenses of project engineers located at development sites. This supplemental authorization to increase the limitation on nonadministrative expenses by $750,000 will be used exclusively for this purpose.

During appearances before this committee and the Committee on Appropriations of the Senate, the Public Housing Commissioner stated there was a possibility that a request for an increase in the authorization would have to be submitted.

Following a policy promulgated by the President, the Administration is making every effort to accelerate scheduled construction starts in order to place the maximum number of projects under construction as soon as possible. Our original estimates are insufficient in adequately perform this important inspection function under an accelerated program. This supplemental authorization, based on the premises set forth in the justification, is considered necessary in order for the Administration to perform properly its assigned responsibilities in this area.

Thank you very much, gentlemen. I shall welcome the questions you may have relating to our supplemental requirements.

Mr. YATES. Thank you.

Miss Reporter, the chart on page 3 may go into the record at this point.

27544—58——56

(The chart referred to follows:)

Summary of revised annual contributions estimates, fiscal year 1958

Fiscal year endings	Number of units	Fixed annual contributions	Amount available to reduce annual contributions	Annual contributions
Public Law 171:				
Sept. 30	50,122	$21,856,908	$3,746,748	$18,110,160
Dec. 31	58,859	27,052,407	5,297,401	21,755,006
Mar. 31	46,975	20,866,425	3,754,063	17,112,362
June 30	52,709	22,184,910	3,951,536	18,233,374
Total, Public Law 171, all fiscal year endings	208,665	91,960,650	16,749,748	75,210,902
Public Law 412:				
Sept. 30	16,959	3,299,781	682,153	2,617,628
Dec. 31	35,304	5,724,761	766,255	4,958,506
Mar. 31	29,373	5,397,596	891,046	4,506,550
June 30	36,631	6,045,533	1,267,199	4,778,334
Total, Public Law 412, all fiscal year endings	118,267	20,467,671	3,606,653	16,861,018
Public Law 671:				
Sept. 30	8,712	1,873,270	328,053	1,545,217
Dec. 31	10,950	1,824,966	684,941	1,140,025
Mar. 31	9,000	1,596,624	319,857	1,276,767
June 30	18,926	3,616,826	350,755	3,266,071
Total, Public Law 671, all fiscal year endings	47,588	8,911,686	1,683,606	7,228,080
Total, all public laws, all fiscal year endings	374,520	121,340,007	22,040,007	99,300,000
Annual contributions estimate				99,300,000
Annual contributions appropriation				95,000,000
Additional annual contributions appropriation required				4,300,000

Mr. JONAS. Let me be sure I understand these figures on page 3.

This indicates that the total number of units in existence is 374,520; is that right?

Mr. CURRIE. That is the number of units on which annual contributions are being paid.

Mr. JONAS. And the total contribution item is $121,340,007?

Mr. CURRIE. That is the amount of the commitment.

Mr. JONAS. And the amount available to reduce annual contributions is $22,040,007?

Mr. CURRIE. That is the amount of residual receipts for these particular projects.

Mr. JONAS. Making the subsidy, $99,300,000?

Mr. CURRIE. That is right.

Mr. THOMAS. Mr. Chairman, I would like to say this:

I do hope that you will watch your payments. Evidences have come up where housing authorities in the country, one particularly, had legal fees of $75,000 a year over a period of 2 or 3 years, and there have been other enormous expense items. We do hope you will strengthen your auditing staff and watch these items of expense more carefully.

We have noticed in your contributions that there will be a variance of 15 or 20 percent in the same State for approximately the same number of units but in different towns. Why should that be?

Mr. Currie. I tried to explain that in my statement.

Mr. Thomas. We could not follow you. You went too fast.

Mr. Currie. There is the differential of the economic levels in the difference communities and the differential in utility costs as between projects. There is also the differential as between the reserves that have been established in a project as against reserves to be established in a project. Projects which have accumulated the maximum operating reserves require no additional reserve funds while projects with small or no reserve funds must utilize a large portion of residual receipts to build up to the maximum reserve.

Mr. Thomas. What were your fixed yardsticks at the inception of this program?

Mr. Currie. The subsidy is to pay the debt service.

Mr. Thomas. What amount of rent were you collecting?

Mr. Currie. Twenty percent of the individual's income.

Mr. Thomas. That was to pay for the operation?

Mr. Currie. Yes.

Mr. Thomas. Are you getting enough money from your rent to do that?

Mr. Currie. Roughly across the program the residual receipts are amounting to about 20 percent.

Mr. Thomas. Have you abandoned that original principle?

Mr. Currie. No, sir. We are very closely following it.

Mr. Thomas. Are you collecting enough rent to pay for your maintenance and upkeep? What was the bill originally aimed at?

Mr. Currie. To get enough out of the rent receipts to establish reserves and maintain the properties in usable condition.

Mr. Thomas. Are you standing by that principle?

Mr. Currie. We are doing our best to do it.

Mr. Thomas. And this annual contribution is money to take care of the operation and maintenance?

Mr. Currie. Not directly.

Mr. Thomas. When you say "not directly" that begs the question.

Mr. Currie. If there were residual receipts those residual receipts would reduce the subsidy.

Mr. Thomas. I repeat my original question: Are you collecting enough money from the tenants to pay for the operation and maintenance of the buildings or do you have to rely on contribution money to do that?

Mr. Ruffner. The program, as a whole, is paying for the operating expenses and producing $22 million of residual receipts which are used to reduce the annual contributions.

Mr. Thomas. You are adhering to that principle?

Mr. Currie. Yes.

Mr. Thomas. Project A may not be paying off but projects B and C and down the line take care of it?

Mr. Currie. The trend is narrowing.

Limitation on Administrative and Nonadministrative Expenses

Mr. Yates. Next is language on limitations on administrative and nonadministrative expenses. We will include the charts on pages PHA–1 through 5 in the record at this point.

(The material referred to follows:)

HOUSING AND HOME FINANCE AGENCY—PUBLIC HOUSING ADMINISTRATION

Limitation on Administrative and Nonadministrative Expenses, Public Housing Administration (Low-Rent Public Housing Program)

LANGUAGE

"The limitation in the second proviso under this head in title II of the Independent Offices Appropriation Act, 1959, on certain expenses of the Public Housing Administration, is increased by $750,000."

Summary

Budget estimates for fiscal year 1959:	
(*a*) Under limitation	$1,500,000
(*b*) Not under limitation	622,000
Subtotal	2,122,000
Supplemental authorization to increase the limitation on nonadministrative expenses necessary to provide adequate inspection services for projects under construction	750,000
Revised authorization, total	2,872,000

This proposed language change is to increase the amount to be authorized for nonadministrative expenses of the Public Housing Administration for fiscal year 1959. The limitation on nonadministrative expenses is used to finance two low-rent activities, and applied as follows:

Activity	Budget estimate, 1959 [1]	Revised estimate, 1959	Difference
Inspection of projects under construction	$1,500,000	$2,250,000	$750,000
Operation and disposition of federally operated projects	622,000	622,000	----------
Total	2,122,000	2,872,000	750,000

[1] Based upon amendment to H. R. 11574 as proposed to the Senate Appropriations Committee.

LEGISLATIVE BACKGROUND

An overall limitation on nonadministrative expenses was imposed by the Independent Offices Appropriation Act of 1955. The limitation authorized expenditure of receipts of the program which were required for (1) expenses incurred in the inspection of projects under construction, and (2) expenses incurred in the operation, maintenance, and disposition of federally owned directly operated projects.

The budget for fiscal year 1959, as submitted to the Congress, requested a limitation of $1,500,000 to be used exclusively for expenses incurred in the inspection of projects under construction. The Administration requested that the limitation no longer be applied to the estimate of $622,000 for operating expenses of the federally owned directly operated projects. The combined estimate for these two activities of PHA amounted to $2,122,000. However, the House committee established a limitation of $1,800,000, which included the operating expenses of the federally owned directly operated projects.

The revised estimate of $2,872,000 will provide $2,250,000 for inspection service for projects under construction, and $622,000 for the operation of the federally owned directly operated projects. This revised estimate for the inspection of projects under construction is based upon an accelerated construction program. The possibility that a request for an increase of the limitation might be submitted was pointed out by the Public Housing Administration in appearances before the Committee on Appropriations of the House of Representatives and the Senate.

ACCELERATED CONSTRUCTION PROGRAM

In accordance with the policy promulgated by the President in a letter addressed to the Administrator, Housing and Home Finance Agency, dated March 19, 1958, the Administration is making every effort to speed up scheduled construction starts so as to place the maximum number of projects under construction as soon as possible. The pertinent paragraph from the President's letter, as it applies to the Public Housing Administration, follows:

"You should secure a review of the status of all projects under annual contributions contract on which construction has not started and, in cooperation with local officials, take all reasonable and feasible steps to see that any obstacles remaining are eliminated and that construction of such projects is promptly begun. This should result in starting construction on new projects at a substantially faster rate than was previously planned."

The present request for an increase in the limitation on nonadministrative expenses of the low-rent public housing program is $750,000 in addition to the budget estimate for fiscal year 1959, as submitted to the Congress. The proposed increase would authorize the Public Housing Administration to expend funds needed to provide an adequate inspection of projects under construction. This does not involve an appropriation of funds. A fixed fee for inspection of projects under construction, based upon a percentage of the total development cost of the projects, is paid by the local authorities. Therefore the requested increase of the limitation represents only an increase in the authority to spend program receipts.

The inspection of projects under construction provides a means of insuring that projects will be built in accordance with specified and acceptable construction standards. This prevents undue losses through high operating and maintenance costs, and benefits the Government in the later stages of development and management.

WORKLOAD

The budget estimate for 1959 anticipated that 35,782 units would be placed under construction. Under the Administration's policy of accelerated construction starts, the projected revised workload for 1959 is as follows:

	Projects	Units
Under construction on Mar. 31, 1958, but not to be completed by June 30, 1958	145	21,884
Additional construction starts shceduled for the period Apr. 1 to June 30, 1958	131	15,657
Construction starts scheduled during 1959	182	41,094
Total number in construction during 1959	458	78,635

These estimates were based on a detailed project-by-project analysis, and take into consideration the construction schedule of each individual project. Construction during the first 9 months of the current fiscal year has already been greatly accelerated. The number of units entering this stage has been over five times the number started during the corresponding period of 1957.

STAFFING

The fees paid by local authorities, as reimbursement to the Administration for salaries and expenses of proect engineers located at development sites, are based on a standard staffing pattern. The inspection engineers are employed when the construction contract is awarded and their services are terminated upon completion of the contract.

The Administration, over a period of years and after a thorough study of the problem with local authorities, has established standard staffing patterns for the inspection of projects under construction. These standards provide that engineers be stationed at project sites in accordance with a graduated scale. Projects containing up to 300 units would be assigned 1 senior engineer during the construction period; projects between 301 and 699 units, 1 senior and 1 junior engineer; projects between 700 and 1,499 units, 1 senior, 1 junior, and 1 assistant engineer; and projects 1,500 units and over, 1 senior and 2 junior engineers and 1 assistant engineer. The Administration considers the standard staffing patterns necessary to enforce recognized labor, construction, and other regulations.

Due to the difficulty experienced in recruiting qualified engineers in recent months, projects have not been completely staffed according to these standards. In the small projects, where location, communications, and timing permit, one engineer has been assigned to more than one project. These conditions have been taken into consideration in the revised estimate. Therefore, the number of positions requested for planned projects is substantially less than would be required if all projects were staffed according to the standard staffing pattern.

The revised estimate, based on the above premises, will provide 413 positions for an average employment of 269, costing $2,250,000.

Obligations by objects (inspection of projects under construction)

Object classification	Budget estimate, 1959 [1]	Revised estimate, 1959	Difference
Total number of positions	175	413	238
Average number of employees	173	269	96
Number of positions at end of year	175	308	133
01 Personal services	$1,305,000	$1,956,000	$651,000
02 Travel	97,000	148,000	51,000
07 Other contractual services	5,000	7,000	2,000
08 Supplies and materials	7,000	11,000	4,000
11 Contribution to retirement fund	85,000	127,000	42,000
15 Taxes and assessments (FICA)	1,000	1,000	
Total obligations by objects for inspection of projects under construction	1,500,000	2,250,000	750,000
Operating expenses of federally owned directly operated projects	622,000	622,000	
Total	2,122,000	2,872,000	750,000

[1] Based upon amendment to H. R. 11574 as proposed to the Senate Appropriations Committee.

WEDNESDAY, JULY 2, 1958.

FEDERAL POWER COMMISSION

WITNESSES

FREDERICK STUECK, VICE CHAIRMAN
ARTHUR KLINE, COMMISSIONER
HENRY R. DOMERS, EXECUTIVE DIRECTOR

SALARIES AND EXPENSES

Mr. YATES. We will now take up the request of the Federal Power Commission.

We will insert in the record at this point the item relating to the Federal Power Commission which appears on page 7 of House Document No. 394.

(The item referred to follows:)

"FEDERAL POWER COMMISSION

"SALARIES AND EXPENSES

"For an additional amount for 'Salaries and expenses', $120,000."

The two foregoing proposed supplemental appropriations are for funds to provide for increased salaries for certain engineers and scientists approved by the Civil Service Commission, effective December 29, 1957.

Mr. YATES. Mr. Commissioner, we are delighted to see you and will be pleased to receive your statement.

Mr. STUECK. Perhaps before I begin the statement which has been prepared by our staff I might make an explanation as to the absence of the other Commissioners.

Our Chairman, Mr. Kuykendall, is on his way back to Washington having participated in the opening of the St. Lawrence seaway.

Commissioner Connole is participating in a discussion of the NARUC; and Commissioner Hussey, who was just sworn last week, is in Shreveport, La., getting ready to come here.

I will do my best to substitute.

Mr. YATES. We will be glad to hear you.

Mr. STUECK. The Commission's budget estimate for the fiscal year 1959, in the amount of $6,385,000, represents the minimum amount required to accomplish the approved work program. Subsequent salary increases for engineers, by virtue of action of the Civil Service Commission, will require additional funds in the amount of $120,000, of which $113,000 is for personal services, and $7,000 for retirement fund payments. The increase is distributed to major activities of the Commission as follows:

Non-Federal hydroelectric project activities	$36,200
Regulation and surveys, electric power industry	22,700
Regulation and surveys, natural gas industry	47,100
Federal projects investigations and regulation	14,000
Total	120,000

The revised detail of personal services included herein itemizes fund requirements of $92,365 over the detail of personal services in the fiscal year 1959 estimate. However, the fiscal year 1959 estimate, reflected within grade step increases for these engineers aggregating $21,690 which pursuant to existing regulations, was included in the amount of lapse deducted. As the engineers are now at the top of their respective grades the step increases will not be effected and the amount of lapse funds should be reduced by the $21,690, included therein for that purpose.

To round off requirements to the $120,000 indicated above, the lapse reduction is set at $20,635 (rather than $21,690) and the retirement fund contribution set at $7,000 (rather than $7,345).

Mr. YATES. Are these increases not mandatory under the law?

Mr. DOMERS. They are mandatory under a directive of the Civil Service Commission in December.

Mr. YATES. Are you increasing the money for engineers and scientists?

Mr. THOMAS. It is mandatory, is it not?

Mr. DOMERS. After they issue the directive, yes.

Mr. YATES. Who is "they"?

Mr. DOMERS. The Civil Service Commission.

Mr. YATES. And the only ones to receive the increase are scientists and engineers?

Mr. DOMERS. Yes.

Mr. YATES. Thank you, gentlemen.

WEDNESDAY, JULY 2, 1958.

FEDERAL COMMUNICATIONS COMMISSION

WITNESSES

ROBERT W. COX, EXECUTIVE OFFICER AND ACTING BUDGET OFFICER
RICHARD F. SOLAN, ASSISTANT TO THE EXECUTIVE OFFICER

SALARIES AND EXPENSES

Mr. YATES. We will now take up the request of the Federal Communications Commission.

We will include in the record at this point the item pertaining to the Federal Communications Commission appearing on page 7 of House Document No. 394.

(The item referred to follows:)

"FEDERAL COMMUNICATIONS COMMISSION

"SALARIES AND EXPENSES

"For an additional amount for 'Salaries and expenses', $142,000."

INCREASE IN SALARIES OF ENGINEERS AND SCIENTISTS

Mr. YATES. Mr. Cox, do you have a statement?

Mr. Cox. No, Mr. Chairman. We felt that our letter, which I trust will be inserted in the record at this point, is fairly clear and self-explanatory.

Mr. YATES. How many people are affected by this?

Mr. Cox. One hundred and ninety?

Mr. YATES. One hundred and ninety?

Mr. Cox. Yes; including about 173 from this year who are on the rolls entering the fiscal year, plus additional engineering positions that we will be setting up immediately out of the additional funds that we have.

Mr. YATES. The letter from Chairman Doerfer to the Honorable Albert Thomas, chairman of the Independent Offices Subcommittee of the Appropriations Committee, dated June 30, 1958, may be inserted in the record at this point.

(The letter referred to follows:)

FEDERAL COMMUNICATIONS COMMISSION,
Washington, D. C., June 30, 1958.

Hon. ALBERT THOMAS,
Chairman, Independent Offices Subcommittee,
Appropriations Committee, House of Representatives,
Washington, D. C.

DEAR CONGRESSMAN THOMAS: The Federal Communications Commission submits herewith a request for a supplemental appropriation in the amount of $142,000 for salaries and expenses for the fiscal year 1959.

This request was made necessary by the action of the Civil Service Commission in raising the salaries of engineers and scientists effective December 29, 1957. This additional requirement could not be anticipated when our annual budget was submitted for 1959. It will not provide for any additional staff but only to pay the higher salaries to engineers.

It is recognized that an agency is sometimes expected to absorb all or part of additional costs such as these. However, we do not see how this could be accomplished without causing longer delays in getting our work out and building

up even larger backlogs. This Commission recently appeared before your committee and explained in considerable detail the status of its work in the various programs we are expected to administer. In recognition of the constantly increasing volume and complexity of problems with which we are faced, an increase in appropriation was recommended in order that we might cope with this work on a more current basis. The Senate Appropriations Committee also recognized our problem and recommended the same increase proposed by your committee. Any amount of this additional $142,000 that we are required to absorb will, in effect, be a reduction in the amount that was recommended by your committee after careful analysis of our workload picture and will result in longer delays and greater backlogs.

We will be glad to furnish any additional information you may desire when we appear before your committee on Wednesday, July 2, 1958.

Sincerely yours,

JOHN C. DOERFER, *Chairman.*

Mr. YATES. These increases will go only to engineers and scientists in accordance with the new law?

Mr. COX. That is correct; and we have only a handful in the scientist category. Most of them are engineers.

Mr. THOMAS. And, for the record, the agency is helpless in the matter. Once the Civil Service Commission sets the grade, the Federal Communications Commission is helpless.

Chairman Doerfer called and we told him he need not appear, but to let these gentlemen come up who are familiar with the details, and we are delighted you came up.

Mr. YATES. Thank you, gentlemen.

SUBCOMMITTEE ON PUBLIC WORKS APPROPRIATIONS

CLARENCE CANNON, Missouri, Chairman

LOUIS C. RABAUT, Michigan
MICHAEL J. KIRWAN, Ohio
JOHN E. FOGARTY, Rhode Island
JOHN J. RILEY, South Carolina
JOE L. EVINS, Tennessee
EDWARD P. BOLAND, Massachusetts
DON MAGNUSON, Washington
BEN F. JENSEN, Iowa
H. CARL ANDERSEN, Minnesota
JOHN TABER, New York
IVOR D. FENTON, Pennsylvania
HAMER H. BUDGE, Idaho

MONDAY, JUNE 30, 1958

ATOMIC ENERGY COMMISSION

WITNESSES

JOHN F. FLOBERG, COMMISSIONER
DR. WILLIARD F. LIBBY, COMMISSIONER
HAROLD S. VANCE, COMMISSIONER
PAUL F. FOSTER, ASSISTANT GENERAL MANAGER FOR INTERNATIONAL ACTIVITIES
A. TAMMARO, ASSISTANT GENERAL MANAGER FOR RESEARCH AND INDUSTRIAL DEVELOPEMNT
DON S. BURROWS, CONTROLLER
J. C. JOHNSON, DIRECTOR, DIVISION OF RAW MATERIALS
E. J. BLOCH, DIRECTOR, DIVISION OF PRODUCTION
BRIG. GEN. A. D. STARBIRD, DIRECTOR, DIVISION OF MILITARY APPLICATION
W. K. DAVIS, DIRECTOR, DIVISION OF REACTOR DEVELOPMENT
DR. J. H. WILLIAMS, DIRECTOR, DIVISION OF RESEARCH
DR. C. L. DUNHAM, DIRECTOR, DIVISION OF BIOLOGY AND MEDICINE
DR. C. W. SHILLING, DEPUTY DIRECTOR, DIVISION OF BIOLOGY AND MEDICINE
DR. A. J. VANDER WEYDEN, DEPUTY DIRECTOR, DIVISION OF INTERNATIONAL AFFAIRS
RICHARD L. KIRK, ASSISTANT DIRECTOR FOR TECHNICAL PROGRAM, DIVISION OF INTERNATIONAL AFFAIRS
DR. JESSE D. PERKINSON, JR., CHIEF, TRAINING AND EDUCATION BRANCH, DIVISION OF INTERNATIONAL AFFAIRS
E. R. GARDNER, DIRECTOR, OFFICE OF SPECIAL PROJECTS
O. S. SMITH, DIRECTOR, DIVISION OF ORGANIZATION AND PERSONNEL
M. SALISBURY, DIRECTOR, DIVISION OF INFORMATION SERVICES
J. A. DERRY, DIRECTOR, DIVISION OF CONSTRUCTION AND SUPPLY
F. K. PITTMAN, DIRECTOR, OFFICE OF INDUSTRIAL DEVELOPMENT
F. J. McCARTHY, JR., ASSISTANT CONTROLLER FOR BUDGETS
J. A. MILLER, DEPUTY ASSISTANT CONTROLLER FOR BUDGETS
C. F. EASON, OFFICE OF THE GENERAL COUNSEL

OPERATING EXPENSES

Program and financing

	1957 actual	1958 estimate	1959 estimate
Program by activities:			
1. Raw materials	$397,836,008	$596,901,000	$670,000,000
2. Special nuclear materials	581,602,626	578,600,000	592,000,000
3. Weapons	323,285,197	459,054,000	532,600,000
4. Reactor development	266,550,778	334,776,000	351,000,000
5. Physical research	59,344,215	71,471,000	71,500,000
6. Biology and medicine	31,519,984	37,895,000	43,000,000
7. Training, education, and information	7,815,945	16,850,000	18,500,000
8. Community	17,777,637	17,921,000	15,000,000
9. Program direction and administration	38,034,044	44,704,000	46,600,000
10. Security investigations	8,442,087	8,442,000	7,000,000
11. Other costs	6,619,603	8,137,000	6,687,000
Adjustment of prior year costs	−82,832		
Total program costs [1]	1,738,745,292	2,174,751,000	2,353,887,000
12. Revenues applied (−)	−34,573,859	−34,875,000	−29,720,000
Net program costs	1,704,171,433	2,139,876,000	2,324,167,000
13. Relation of costs to obligations:			
Costs financed from obligations of other years, net (−)			−26,167,000
Obligations incurred for costs of other years, net	68,785,462	100,727,221	
Total program (obligations)	1,772,956,895	2,240,603,221	2,298,000,000
Financing:			
Comparative transfers to other accounts	4,148,153	2,799,000	
Unobligated balance no longer available	37,932,221	10,000,000	
New obligational authority	1,815,037,269	2,253,402,221	2,298,000,000
New obligational authority:			
Appropriation	1,740,400,000	2,215,470,000	2,288,000,000
Transferred from "Plant acquisition and construction," Atomic Energy Commission (70 Stat. 769)	11,500,000		
Appropriation (adjusted)	1,751,900,000	2,215,470,000	2,288,000,000
Reappropriation	63,137,269	37,932,221	10,000,000

[1] Includes capital outlay for equipment: 1957, $57,398,823; 1958, $72,327,000; 1959, $80,547,000.

Object classification

	1957 actual	1958 estimate	1959 estimate
ATOMIC ENERGY COMMISSION			
Total number of permanent positions	7,435	7,453	7,491
Full-time equivalent of all other positions	32	83	70
Average number of all employees	6,694	6,991	7,178
Number of employees at end of year	6,910	7,215	7,215
Average grade and salary, grades established by the Atomic Energy Commission	8.4 $6,141	8.5 $6,237	8.6 $6,319
01 Personal services:			
Permanent positions	$40,196,082	$42,486,795	$44,297,139
Positions other than permanent	224,407	456,555	412,387
Other personal services	1,730,738	2,056,650	2,090,474
Total personal services	42,151,227	45,000,000	46,800,000
02 Travel	2,893,156	3,600,000	3,850,000
03 Transportation of things	5,559,611	8,484,000	10,317,000
04 Communication services	3,551,111	3,479,000	3,573,000
05 Rents and utility services	226,657,217	209,700,000	213,400,000
06 Printing and reproduction	495,004	885,000	868,000
07 Other contractual services	931,589,373	1,154,631,178	1,138,334,000
Services performed by other agencies	26,218,489	26,243,000	25,619,000
08 Supplies and materials	442,323,098	677,600,000	734,600,000
09 Equipment	74,856,000	74,077,000	76,886,000
11 Grants, subsidies, and contributions	4,437,163	9,583,000	8,623,000
13 Refunds, awards, and indemnities	47,571	316,000	316,000
15 Taxes and assessments	4,663	7,000	8,000
Unvouchered	30	100,000	100,000
Total Atomic Energy Commission	1,760,783,713	2,213,705,178	2,263,294,000
ALLOCATION ACCOUNTS			
Total number of permanent positions	41	39	36
Full-time equivalent of all other positions	1	1	1
Average number of all employees	41	39	36
Number of employees at end of year	39	37	37
Average GS grade and salary	6.2 $4,846	6.1 $4,819	6.1 $4,868
01 Personal services:			
Permanent positions	$202,662	$201,347	$189,500
Positions other than permanent	14,115	2,100	2,100
Other personal services	2,973	1,153	1,000
Total personal services	219,750	204,600	192,600
02 Travel	4,291	2,300	300
03 Transportation of things	63,506	1,300	3,300
04 Communication services	158	250	150
05 Rents and utility services	28,567	30,075	75
07 Other contractual services	13,827,105	26,310,316	32,777,900
08 Supplies and materials	−1,997,274	336,232	1,719,375
09 Equipment	27,056	----------	----------
11 Grants, subsidies, and contributions	----------	12,970	12,300
15 Taxes and assessments	23	----------	----------
Total allocation accounts	12,173,182	26,898,043	34,706,000
Total obligations	1,772,956,895	2,240,603,221	2,298,000,000
Obligations are distributed as follows:			
Atomic Energy Commission	1,760,783,713	2,213,705,178	2,263,294,000
Department of Agriculture:			
Soil Conservation Service	154	----------	----------
Agricultural Research Service	246	539	----------
Department of Commerce: National Bureau of Standards	166,132	----------	----------
Department of the Interior:			
Geological Survey	−37,266	37,266	----------
Bureau of Mines	129,256	75,757	75,000
Fish and Wildlife Service	−287	----------	----------
Department of the Navy	36,355	44,860	----------
Department of the Army	13,897,343	25,917,621	32,920,000
General Services Administration	−2,018,463	322,000	1,711,000
Department of the Air Force	−14,474	500,000	----------
Department of Health, Education, and Welfare: Public Health Service	14,186	----------	----------

REVISED ESTIMATES

Operating Expenses, Atomic Energy Commission

Program and financing

	In budget	Revised estimate	Difference
Program by activities:			
1. Raw materials	$670,000,000	$680,000,000	$10,000,000
2. Special nuclear materials	592,000,000	580,400,000	−11,600,000
3. Weapons	532,600,000	547,600,000	15,000,000
4. Reactor development	351,000,000	420,300,000	69,300,000
5. Physical research	71,500,000	90,000,000	18,500,000
6. Biology and medicine	43,000,000	43,000,000	----------
7. Training, education and information	18,500,000	21,225,000	2,725,000
8. Community	15,000,000	15,000,000	----------
9. Program direction and administration	46,600,000	46,600,000	----------
10. Security investigations	7,000,000	6,242,000	−758,000
11. Other costs	6,687,000	6,687,000	----------
Total program costs	2,353,887,000	2,457,054,000	103,167,000
12. Revenues applied	−29,720,000	−27,720,000	2,000,000
Net program costs	2,324,167,000	2,429,334,000	105,167,000
13. Relation of costs to obligations:			
Costs financed from obligations of other years, net (−)	−26,167,000	----------	64,427,000
Obligations incurred for costs of other years, net	----------	38,260,000	
Total program (obligations)	2,298,000,000	2,467,594,000	169,594,000
Appropriation	2,288,000,000	2,418,000,000	130,000,000
Reappropriation	10,000,000	49,594,000	39,594,000

Obligations by object

Object classification	In budget	Revised estimate	Difference
ATOMIC ENERGY COMMISSION			
Total number of permanent positions	7,491	7,491	----------
Full-time equivalent of all other positions	70	70	----------
Average number of all employees	7,178	7,178	----------
Number of employees at end of year	7,215	7,215	----------
01 Personal services	$46,800,000	$46,800,000	----------
02 Travel	3,850,000	3,850,000	----------
03 Transportation of things	10,317,000	10,317,000	----------
04 Communication services	3,573,000	3,573,000	----------
05 Rents and utility services	213,400,000	213,400,000	----------
06 Printing and reproduction	868,000	868,000	----------
07 Other contractual services	1,138,334,000	1,289,546,000	$151,212,000
Services performed by other agencies	25,619,000	25,461,000	−158,000
08 Supplies and materials	734,600,000	746,600,000	12,000,000
09 Equipment	76,886,000	83,426,000	6,540,000
11 Grants, subsidies, and contributions	8,623,000	8,623,000	----------
13 Refunds, awards, and indemnities	316,000	316,000	----------
15 Taxes and assessments	8,000	8,000	----------
Unvouchered	100,000	100,000	----------
Total, Atomic Energy Commission	2,263,294,000	2,432,888,000	169,594,000
Transfer appropriations with other agencies	34,706,000	34,706,000	----------
Grand total	2,298,000,000	2,467,594,000	169,594,000

Mr. CANNON. This morning we begin consideration of the budget for 1959 for the Atomic Energy Commission.

There has been a supplemental budget of $130 million requested for 1959, in House Document No. 388, making the total of new funds requested for Operating Expenses for 1959 of $2,418,000,000. House Document No. 388 reads as follows:

ATOMIC ENERGY COMMISSION

Budget page	Heading	Original estimate	Changed to—	Increase
117-118	Operating expenses	$2, 288, 000, 000	$2, 418, 000, 000	$130, 000, 000

This amendment is necessary to provide for expansion of basic research in the physical sciences, especially nuclear physics; for further acceleration of the reactor development program, particularly the development of civilian atomic power reactors; and for augmentation of the effort to develop nuclear weapons.

Mr. CANNON. We will begin with Commissioner Floberg's general statement.

GENERAL STATEMENT OF COMMISSIONER FLOBERG

Mr. FLOBERG. Mr. Chairman and members of the committee, my name is John Floberg; I have been a member of the Atomic Energy Commission since October 1, 1957. My opening statement will outline the principal activities of the atomic energy program and summarize the Commission's financial requirements for fiscal year 1959. Following my statement, other officials are prepared to discuss particular phases of the program in greater detail. Your questions will be welcome at any time.

The Commission's budget requirements are provided in two appropriations, one for operating expenses and the other for plant acquisition and construction. The estimates for operating expenses provide for obligations in fiscal year 1959 of $2,467,594,000. We have requested that this requirement be met by reappropriation of unobligated balances remaining at the end of fiscal year 1958, estimated at $49,594,000, and by a new appropriation of $2,418 million.

PLANT ACQUISITION AND CONSTRUCTION

For plant acquisition and construction, the estimates provide for obligations in 1959 of $380,367,000. Of this amount, $111,174,000 represents projects which will not be fully contracted for in the current fiscal year but will be carried into 1959. The new requirements for 1959 in the amount of $269,193,000 are to be met by free funds in the amount of $65,193,000 resulting from savings and deferments of prior year construction projects, and a new appropriation of $204 million. These new requirements are consistent with the authorization legislation requested by the Commission and still under consideration by the Congress.

CONTRIBUTION TO EUROPEAN ATOMIC ENERGY COMMUNITY (EURATOM)

On June 23, 1958, the President in a message to the Congress announced a program of cooperation with the European Atomic Energy Community, known as Euratom, and requested that Congress approve the necessary legislation for the program. The budget before you today makes no provision for the funds required, estimated to be $25 million of operating funds in 1959. We would expect that a request for this amount will be submitted by the Bureau of the Budget upon approval of the legislation authorizing the Euratom program.

The Commission's budget for fiscal year 1959 is not strikingly different from the budget of the year just closing, or from those of other recent years.

OPERATING PROGRAM

The operating program continues to grow, but at a decreasing rate. Total net operating costs are estimated at about $2,429 million in 1959, an increase of $314 million, or 15 percent, over the year just closing. In 1958, the estimated increase over the preceding year was 24 percent.

As in the year just closing, most of the operating cost increase projected for 1959 is again concentrated in three programs, namely, raw materials (26 percent of the increase), weapons (32 percent), and reactor development (29 percent).

Still another point of similarity between the 1959 budget and earlier budgets is the extent to which the work to be performed is related to military requirements. We look forward hopefully, of course, to the time when the focus of all atomic energy work will be on peaceful objectives. Even now, it would be a serious mistake to consider our programs for the production of special nuclear materials as being associated exclusively with military objectives. Our capacity to produce special nuclear materials is the bulwark which has enabled the United States to provide world leadership in promoting atoms for peace. With our demonstrated capacity, we have been able to assure pioneer developers and users of civilian power reactors, both here and abroad, that the United States is willing and able to make nuclear fuel available over the operating life of the reactors they wish to build.

Nevertheless, the actual quantity of nuclear fuel required for shipment to civilian power reactor operators in 1959 is quite small. It will be several years, in fact, before actual shipment of any substantial part of AEC's total production of special nuclear materials will be required for the reactors now planned or under construction. For this reason, the 1959 costs of the production programs concerned with raw materials, special nuclear materials, and weapons can properly be considered as being almost entirely related to military requirements. If we include also the cost of development work on military reactors, we find that the portion of AEC's 1959 net operating cost which is directly related to military requirements is 83 percent. A similar relationship has existed for several years. The corresponding percentages in 1957 and 1958 were 86 and 85 percent, respectively.

While military needs continue to dominate the budget requirements, the importance of the activities represented by the remaining 17 percent of the net operating cost is very great indeed. This segment of the Commission's program includes, for example, the whole broad effort on reactors for civilian use, the research in biology and medicine, investigations into controlled thermonuclear reactions, studies in physics, chemistry, and metallurgy, and the expanded application of radioisotopes. These, indeed, are the elements of the atomic energy program which make the atom a symbol of hope and industrial progress not only in the United States but throughout the rest of the world under the atoms-for-peace program.

PLANT ACQUISITION AND CONSTRUCTION

The Commission's construction program also resembles the pattern of other recent years. No major facilities for the production of materials are included in this budget, although provision continues to be made for plant modifications to increase the efficiency and safety of production operations. Expansion of facilities for development and production of weapons continues, as required to cope with the changing characteristics of our weapon designs. Projects related to the reactor development program continue to grow in number and will require 55 percent of the total estimated 1959 obligations for construction.

Let me now comment on the main features of our budget programs.

RAW MATERIALS

The largest single program in our 1959 budget is concerned with the procurement of raw materials. The cost of this program is estimated as $680 million. The increase over 1958 is estimated to be $83,100,000, or 14 percent.

Primary interest centers in the procurement of uranium ores and concentrates, and 96 percent of the program cost is for this purpose. The remaining 4 percent is for procurement of other raw materials, for evaluation of uranium resources, and for improving mining and milling operations.

The general outlook for obtaining the uranium we need for the years immediately ahead continues to be favorable. The rapid climb in AEC receipts of uranium concentrates over the past 3 years will level off in 1960. Projected 1959 receipts of approximately 32,000 tons of U_3O_8 are 3 times the quantity procured in 1956.

Earlier dependence on overseas sources has been greatly reduced. The United States has continued during the past year to outproduce all other countries. New mills coming into operation in Canada, however, may enable that country to equal our domestic production during 1959. Canada and the United States together will supply 84 percent of AEC concentrate receipts next year.

Projected deliveries of uranium to the AEC are substantially in balance with the total requirements now foreseeable for both military and peaceful uses of atomic energy. To prevent overexpansion of the domestic uranium industry, the AEC announced in October 1957 that it would limit future procurement commitments that would involve construction of additional milling capacity not already provided for under executed contracts.

Investigation subsequently disclosed that certain areas of the Western United States had no market, or an inadequate market, for ores which had been developed in response to Government encouragement prior to November 1, 1957.

After review of this problem in the light of our established uranium procurement goals, it was decided that a limited expansion of our domestic program could be undertaken, consistent with our overall supply requirements. Accordingly, the Commission announced in April that it had authorized a limited number of additional contracts for the purchase of concentrates. This action is expected to result in additional milling capacity which could produce about 2,500 tons of U_3O_8 per year. Most of the new facilities will begin production in fiscal year 1960. The Committee on Appropriations was informed of this action by letter of April 2.

Our budget, of course, covers only the cost of the uranium we expect to receive next year. Forward commitments extending beyond fiscal year 1959, mainly for the period until 1962 but in some instances through calendar year 1966, are estimated to be $4.1 billion. This estimate is based upon expected deliveries under existing agreements with Australia, Belgium, Canada, Portugal, and South Africa and under contracts with domestic producers, and also covers additional quantities which might be offered by United States producers under the guaranteed price established for uranium concentrates for the period from 1962 to 1966.

SPECIAL NUCLEAR MATERIALS

The second largest program is concerned with the production of special nuclear materials. Under the special nuclear materials program we budget for the cost of operating our major production plants. These are principally the reactor installations at Hanford and Savannah River, the diffusion plants at Oak Ridge, Paducah, and Portsmouth, and the feed materials plants in Missouri and Ohio. These plants convert raw materials into fissionable materials and other special materials from which nuclear energy can be released, either in weapons or in reactors.

The key fact about this portion of our budget is that the total cost of operating AEC materials production plants has become stabilized. The projected cost of the special nuclear materials program in 1959 is $580,400,000. This amount is about 2 percent more than the estimated cost for 1958, and is slightly less than the actual cost experienced in 1957. While these production activities account for only 24 percent of total net operating costs, a truer measure of their significance is perhaps our financial investment in the plant facilities they use. These plants represent an investment of about $4.8 billion, or nearly 70 percent of the total AEC plant investment of $6.9 billion on June 30, 1957.

As increased quantities of special nuclear materials are produced, a continued reduction is expected in their unit costs.

Process development work on production problems will include work necessary to adapt and modify existing plants and processes to recover fuels from power reactors. While eventually it is hoped that private industry will perform these services on a commercial basis, it appears that AEC must presently accomplish these services

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for an interim period so that the materials can be returned promptly to useful form. The construction estimates include $10 million to be obligated in fiscal year 1959 for plant modifications to existing facilities required for AEC to perform this service.

WEAPONS

The weapons program will cost $547,600,000 in 1959, about $100 million more than in 1958. These are the costs of fabricating, procuring and assembling weapon components, and performing the functions of weapon research and development, testing, stockpile surveillance, and storage.

The research and development is continuing to yield new information applicable to weapon development and such data will be incorporated in the design of new models which will greatly enhance the capabilities of the Armed Forces.

PROJECT PLOWSHARE

Nuclear explosives are today believed to have peaceful applications of great potential significance. Preliminary studies, conducted under the designation Project Plowshare, have convinced scientists in our principal weapon laboratories that a number of very practical uses should be investigated. The results of the underground nuclear detonation performed last September in Nevada, known as the Rainier shot, seem to confirm this promise. Among the most interesting applications now envisaged are excavation, oil recovery, mining, power production, and large-scale isotope production.

Field surveys will be performed in 1959 to investigate the practicability of using nuclear explosives to excavate a harbor on the northwest coast of Alaska. If found useful, safe and practicable, the excavation could take place in 1960.

Work planned for 1959 includes investigation of other applications and the design and development of prototype devices, as well as the survey for the Alaskan project. The costs for next year are estimated at $3 million. However, the Commission expects that this work will be expanded in subsequent years, as the possibilities unfold. The investigation of a number of the uses will be carried out as cooperative undertakings with industry.

REACTOR DEVELOPMENT

The reactor development program comprises numerous experimental and prototype reactor projects for a wide range of military and civilian purposes, research and development on various aspects of reactor technology, and research on controlled thermonuclear reactions. The operating costs for the entire program are estimated at $420,300,000 in 1959, or $91 million more than the estimate for 1958. Increases occur in each of the major segments of the program, as new experimental projects are undertaken and older experiments move into the operating phase.

Military reactor projects are expected to incur operating costs of $200 million, or nearly half the operating costs estimated for all reactor development. Aircraft reactor projects, being pursued in

cooperation with the Air Force, represent $100 million of these costs. They include projects for nuclear propulsion of manned aircraft and missiles, and for nuclear power sources to supply electricity for satellites.

In the dual approach to nuclear propulsion for manned aircraft, the primary emphasis continues to be on the direct cycle system. The first of the direct cycle prototype reactors, operating on a test stand and not in an airplane, was successful in powering a jet engine as long ago as January 1956.

Experiments will continue in an effort to develop fuel and reactor components capable of withstanding higher temperatures for extended periods of power operation. Air Force development of the turbojet portion of the propulsion system is continuing satisfactorily.

The other approach is a liquid metal system. In this system heat is transferred from the reactor by means of a liquid-metal coolant. Work on this system is being continued at about the same level as in 1958.

Missile propulsion experiments are in an earlier stage, in which the objective is to demonstrate the feasibility of nuclear rocket and nuclear ramjet propulsion systems. Nuclear rocket engines could have application in advanced intercontinental ballistic missiles, or in satellite or other space vehicles. Nuclear ramjet engines have promise for strategic bombardment and reconnaissance vehicles. In the nuclear rocket project, the design, development, and fabrication of an initial nonflyable test reactor is scheduled for 1959. For the ramjet propulsion system experimental and theoretical work to determine the feasibility of applying heat from a reactor to ramjet engines is continued.

To provide electric power for satellite instruments and signals, two approaches are being followed. One is a radioisotope unit which uses heat from the decay of a radioisotope. The second approach is the development of a small reactor unit.

For the Navy, the development of reactors to propel ships is expected to involve costs in 1959 of $91,400,000, about 3 percent more than in 1958. All naval reactors now under development are the pressurized water type. However, these reactors cover a wide range of power ratings. A single reactor system is being developed for a small submarine, and an eight-reactor system for an aircraft carrier. To meet these varied requirements, three land prototypes are already under construction and a fourth was recently authorized. Two are for submarine systems and two are for surface ship systems. Knowledge gained from building and operating these prototypes will soon be evidenced in further additions of nuclear propelled ships to the fleet.

Army reactor projects are aimed at providing sources of heat and power to military installations located at remote sites, and at meeting other special requirements of any of the military services. A particular objective is to develop small, portable reactor plants which can be transported with minimum effort and be erected at minimum cost. A pressurized water reactor plant is operating successfully at Fort Belvoir. At the National Reactor Testing Station the testing of a low-power boiling water reactor prototype will proceed in 1959, and fabrication of a gas-cooled reactor experiment will continue. Investigations will also continue on advanced, compact reactor systems suit-

able as a mobile source of electric power and for propulsion of very large land vehicles.

Projects for the development of civilian power reactors will constitute the largest single category in the entire reactor development program in 1959. The estimated costs for civilian power projects in that year are $113,590,000, about $31 million more than in 1958.

Civilian power projects fall into two groups, those in the Government program and those in the cooperative arrangements program. Projects in the Government program represent the continuing experimental investigation of 10 different reactor concepts believed to have promise for economical nuclear power. Investigation of one of these reactor concepts typically involves the development, design, fabrication, and operation over a period of several years of one or more reactor experiments. The purpose of the experiments is to establish the technical feasibility of the design concept, to develop its component systems, and to identify the technical and economic problems, hazard characteristics, and other factors which must be weighed in determining whether construction of a larger scale prototype should next be undertaken.

Projects in the cooperative arrangements program represent the next step, that of constructing a power demonstration reactor. These projects originate as proposals by electric utilities, submitted in response to invitations issued from time to time by the Commission, in which certain types of Government assistance are offered. In most cases the entire capital cost of the reactor and conventional plant facilities is paid by the utility. The partial exception occurs in the arrangements for electric cooperatives and a municipally owned utility. In these cases the Government contracts to build and own the reactor, and to sell steam to drive the turbogenerator owned by the utility. For most projects in the cooperative arrangements program, the assistance extended relates only to research and development and to the waiver of charges for use of certain materials; in no case do any AEC funds go into construction of the conventional generating facilities.

Before approving a cooperative arrangement project, the Commission satisfies itself that the proposed project will make a significant contribution to the reactor art.

The practical experience gained in the construction and operation of these reactor plants will substantially shorten the period until nuclear power can be considered economically competitive. Without the very considerable amounts of private capital provided by industry for these undertakings, either the technology of nculear power would be advanced more slowly or the Government would be obliged to bear much higher costs.

The operating costs anticipated for the two categories of civilian power projects are about $91 million for the Government projects and $23 million for the cooperative arrangement projects. Particular mention should be made of the $51 million provision for construction of a gas-cooled power reactor. The Commission will endeavor to establish this project as a cooperative arrangement with industry. If a satisfactory proposal is received, additional operating funds will be required. We have proposed language which would permit the Commission in that event to transfer funds provided in the plant

acquisition and construction appropriation for this project to the appropriation for operating expenses.

The budget presentation, summarized at the beginning of this statement, contemplates that funds in the amount of $17,243,000 would be obligated before June 30, 1958, for two of the cooperative arrangement projects, namely, the projects for the city of Piqua, Ohio, and for the Carolinas-Virginia Nuclear Power Associates. Because these contracts will not be executed until 1959, the amount of unobligated funds at June 30, 1958, will be greater by the amount of these two contracts and the estimated obligations to be incurred in 1959 will also be higher by the same amount. There is no effect on the appropriation request.

Many factors which influence the efficiency and economy of reactor operation may be common to several reactor types. This can be said for problems of reactor safety, fuel processing, and recovery techniques, fuel fabrication, instrumentation, and control systems. These activities and a variety of other work of general application, such as the development of new alloys and materials, will be continued in 1959.

A new feature of the reactor development program in 1959 will be the work on applied fuel cycle development. This work represents a concerted attack on the numerous factors which determine the unit fuel cycle cost of reactor operation. Lower fuel cycle costs through cheaper fabrication and separation and more complete burnup must be achieved if nuclear power is to become economically competitive. Preparations will be made in 1959 for testing multiton batches of developmental fuel elements in some of the full-scale power reactors scheduled to come into operation in the following years.

Another civilian use of nuclear energy is for propulsion of merchant ships. The Commission and the Maritime Administration cooperate in developing merchant ship propulsion systems. The nuclearship *Savannah*, for which the keel was laid in May, will be driven by a pressurized water reactor system. Higher performance for commercial ships may ultimately be obtained from a gas-cooled reactor with a closed cycle gas turbine, but formidable development problems must be overcome. Preliminary developmental design studies for such a system will continue in 1959.

The final category to be mentioned in the reactor development program is research on controlled thermonuclear reactions. Costs for this work in 1959 are estimated to be $39,140,000, or about double the amount for 1958. Four approaches are being pursued in the effort to obtain useful power from controlled fusion reactions—reactions which occur at temperatures of the order of 100,000,000° centigrade.

While each of the four approaches shows promise, our scientists do not consider that a real breakthrough has yet occurred.

Nevertheless there is real progress to report. Our laboratories have obtained hot plasmas—bodies of ionized gas—whose energy levels appear to be on the threshold of the thermonuclear range. Higher energy levels must be attained and ways must be found to increase the time during which the extremely hot gas is confined. Although the production of power from fusion remains a distant goal, the ultimate prospect of generating useful power from sea water warrants major emphasis on this research.

Construction projects for reactor development require an estimated $208,772,000 for obligation in 1959. The varied facilities being provided for this work include 20 projects requiring appropriation for fiscal year 1959 of new obligational authority totaling about $160 million, and 14 projects previously authorized, most of which are already in progress and for which about $49 million will be obligated in 1959 from carryover funds.

PHYSICAL RESEARCH

The Commission's physical research program is expected to incur costs of $90 million, an increase of $18,500,000 over 1958. The research supported under this program is in the broad fields of physics, chemistry, metallurgy, and mathematics. The limits of our knowledge in these areas will continue to determine how far and how fast we can progress toward full realization of the benefits atomic energy holds out to man.

The newspaper headlines of the past year make superfluous any appeal or argument for the importance of basic research today. We are confident that the projected expansion is needed and can be carried out without relaxation of quality standards.

The largest growth projected is in the category of high-energy physics, to provide for increased utilization of high-energy-particle accelerators. Study of the interactions of little-understood nuclear particles which can be produced only in such devices is the likeliest key to fundamental knowledge about the makeup of matter. The practical consequences of new knowledge of this type can scarcely be guessed, but there is certainly no reason to believe that the great landmarks of discovery in nuclear science are all behind us.

The greatest part of the $21,600,000 of obligations to be incurred for construction projects in the physical research program is also for particle accelerators. Projects already in progress for construction of accelerators at Cambridge, Mass., at Princeton, N. J., and at Argonne National Laboratory will be continued, and certain improvements to three major accelerators at Berkeley, Calif., will be undertaken.

Since the war, the construction of major pieces of research equipment, particularly accelerators capable of imparting billion-volt energies, has moved far beyond the financial resources of all interested organizations except the Federal Government. The alternating gradient synchrotron under construction at Brookhaven, for example, and the high-intensity accelerator for Argonne, fall in the $25 million to $30 million cost range. Design studies will continue in 1959 for accelerators of still higher performance.

BIOLOGY AND MEDICINE

We turn now to biology and medicine.

Greater understanding of atomic radiation effects on man and his environment must go hand in hand with the development and increased use of atomic energy. At the same time, we must continue our research on peaceful biomedical applications of atomic energy.

We are requesting a total of $43 million for the biology and medicine program, an increase of $7 million over fiscal year 1958. This increase is being requested in recognition of the urgency of obtaining more

definite information about fallout and radiation hazards from atomic weapons tests and civilian atomic energy operations.

A major responsibility of the biology and medicine program is the development of data that can be used to establish accurate limits of permissible radiation exposure. To do this, it is necessary to determine the effects of nuclear radiation on various forms of life, from viruses to large animals and man himself. These effects must be related to the amount and character of the radiation that causes them, and data obtained from extensive animal experiments must be interpreted to determine the probable effects on man. It is also important to find out just how radiation injury of different types is caused, so that we can be guided in our research into means of combating the detrimental effects of radiation.

We expect to expand our genetic research to obtain information upon which more accurate estimates of the genetic effects of radiation on human populations can be based, and to learn more about the nature of genes and chromosomes and the precise manner in which they are altered by radiation. Without such studies it is improbable that any method will be developed to alleviate the genetic effects of radiation, a matter of great public concern today.

We have for several years been conducting a worldwide sampling and monitoring program to determine the extent of contamination on land, in the air, and in the sea from weapons tests. Studies of radioactive isotopes in the environment will be expanded in 1959, with increased emphasis on contamination that might result from waste disposal and reactor operations. Considerable additional attention will also be given to another aspect of the fallout problem—the effects of radioactive isotopes that have been incorporated into the body. We hope from these studies with animals to estimate more reliably the effects of strontium 90 on man.

Research projects on the beneficial applications of atomic energy represent an important phase of the biology and medicine program, and more than $10 million is requested for this purpose.

Progress in cancer research continues to demonstrate the usefulness of radiation and radioisotopes in the treatment of this disease. Moreover, research with radioisotopes is giving us greater knowledge of the differences between cancerous and normal tissues. The new Brookhaven Medical Research Center, with the first nuclear reactor to be built exclusively for biological and medical research and the treatment of patients, will be completed early in fiscal year 1959.

Radioisotopes are a valuable tool in the laboratory for the study of disease and life processes, and important research findings continue to be made with their use. Perhaps most important is the greater understanding we are getting of the factors affecting nutrition and growth. This knowledge, combined with improved methods of controlling plant and animal diseases, which are also being investigated with the use of radioisotopes, may eventually lead to increased food production throughout the world.

TRAINING, EDUCATION, AND INFORMATION

The activities planned for 1959 in the training, education, and information program are estimated to cost $21,225,000, an increase of $4,375,000 over 1958. The major changes stem from establishment

of a program for industrial isotope development and from plans for United States participation in the Second International Conference on Peaceful Uses of Atomic Energy being held in Geneva, Switzerland, in September 1958.

Use of radioisotopes is estimated to be saving industry $500 million a year at the present time. While such savings have increased many times over in recent years, we believe that industry has been too slow in accepting and developing the full potentialities of radioisotopes.

Accordingly, the Commission has launched this year a relatively small effort to hasten wider use by industry, in the belief that within a few years industry can realize annual savings to be reckoned in billions of dollars. At an estimated cost of $5 million, we propose in cooperation with industry to develop additional practical applications of isotopes to industrial processes, to establish training institutes for industrial personnel, to encourage private production of isotopes, and speed up development of massive radiation techniques.

To serve present demand, the AEC produces and sells more than 100 radioisotopes.

As tracers, radioisotopes are used in industry to measure the flow of process materials through complex piping systems, to locate the action of oil-well stimulation methods, to measure catalyst circulation in oil refineries, to locate leaks, and to measure wear and corrosion, just to mention a few of the hundreds of industrial applications already known.

Radioisotopes find even more varied use in nuclear gages, which can report data on thickness, liquid levels, density, and moisture without actual contact with the process material. As thickness monitors, such gages are now routinely used in the manufacture of materials ranging from heavy sheet steel to the thinnest plastic and paper. Over 90 percent of the tire fabric and 80 percent of the tin cans used in this country are controlled, during their production, by radioisotope thickness gages. Nuclear gages mounted on the outside of a pipe or container can measure the density, composition, or mass flow of the contents. In this way, for example, internal corrosion by chemicals can be measured directly. In conjunction with automatic control equipment, nuclear gages are contributing toward plant automation.

Radioisotopes are now being used by industry in greatest quantity in radiographic examination of castings, welds, and machine components. Very much larger quantities, particularly separated fission products, are expected to be used in new industrial operations as sources of massive radiation. Such uses include initiation of chemical reactions, the polymerization of plastics, the vulcanization of rubber, petroleum cracking, and the radiation sterilization of foods and drugs.

The general nature of medical uses of radioisotopes is perhaps better known. Tracer techniques provide rapid information on blood circulation, thyroid activity, and location of tumors. Therapeutic uses include administration of tissue-destroying doses of radioactivity, either by selective absorption or direct placement of a particular isotope in the affected tissues. It is obviously impossible to place a dollar value on the fact that a million medical patients are being diagnosed or treated with radioisotopes each year.

For agriculture, radioisotopes are providing a wealth of information not otherwise obtainable on farm animals, nutrition and diseases, soil

chemistry, crop improvement, and plant physiology. Tracers reveal the action of insecticides, absorption of plant-destroying chemicals, utilization of fertilizers and growth hormone, and the life cycles and habits of insect pests. Radiation from isotopes is used to induce beneficial genetic mutations in plants. Rust-resistant oats and higher yielding peanuts are among the radiation-improved crops.

Other activities covered by the training, education, and information program represent continuing efforts to broaden the interest and knowledge of the scientific community here and abroad in the fields of nuclear technology. These activities include the distribution of technical reports, and, indeed, entire libraries, of which we have presented about 60 to foreign countries and international organizations, in addition to the 79 depository libraries maintained throughout the United States. The Commission also operates a limited number of specialized schools of nuclear science and technology, and awards fellowships for advanced study in these fields. Considerably more emphasis is placed on providing assistance to established educational institutions for the procurement of specialized equipment for training in the nuclear sciences, to hasten the day when our educational system will be able to keep pace with the need for technical personnel with nuclear training.

Probably no other single event has so advanced the cause of atoms for peace as the 1955 Geneva Conference on the Peaceful Uses of Atomic Energy. A second international conference of this type is to be held in Geneva in September 1958, the Commission being responsible for the scientific aspects of the United States participation. Our country's exhibits will touch on all the principal fields of peaceful use, but will feature a number of operating devices illustrating our fourpronged attack on the problem of achieving controlled thermonuclear reactions.

COMMUNITY PROGRAM

The Commission continues to dispose of housing and commercial properties at the Oak Ridge and Richland communities. The budget estimates for 1959 reflect the sale of all single and duplex housing, and a major portion of the apartments, dormitories, and commercial properties by the end of 1959. The effect of this property disposal on the Community budget estimates for 1959 is to reduce operating revenues by $3,770,000 below the $15,243,000 estimated for 1958, as a result of the loss of rentals on the property disposed. Operating costs will also be reduced, by $2,921,000 from the 1958 level of $17,921,000, reflecting the elimination of maintenance of the properties disposed. The community municipal costs including school and utility operations will continue in 1959, but we will experience the falloff in rental revenues mentioned above. Therefore the communities will again incur net operating costs, rather than net revenues we experienced prior to 1958.

The estimates for 1959 provide for a full year of municipal services, since Oak Ridge is not planning to incorporate until 1960 or 1961, and Richland, while planning to incorporate in fiscal year 1959, will do so late in the year, with the result that transfer of municipal facilities and functions will take place in fiscal year 1960.

PROGRAM DIRECTION AND ADMINISTRATION

The estimates for our so-called overhead costs in 1959 continue the favorable relationship to total operating costs of the Commission that we have experienced in past years. In 1959 these costs represent 1.9 percent of total operating costs, compared with 2.1 percent in 1958 and 2.2 percent in 1957. Although the 1959 estimate of $46,600,000 is $1,896,000 higher than 1958, our planned 1959 employment merely continues the number of people we expect to have on the rolls by the end of 1958. The increase in costs represents carrying for a full year the additional people hired in 1958, together with associated supporting costs.

It is significant to note that although no increase in staff is planned, in certain areas, progressively heavier workload will fall on program direction and administration personnel. An increase in the volume and variety of licenses is expected; our inspection load continues to increase; expansion in the peaceful uses aspects of the Commission's programs will demand more staff attention; and as our bilateral agreements with foreign countries mature and increase in number, increased staff time will have to be devoted to these activities. Consequently, these demands will have to be met by adjustments in our organization as dictated by program trends.

SECURITY INVESTIGATIONS PROGRAM

Our budget also includes $6,242,000 for costs of security clearance investigations of AEC and AEC contractor employees. These investigations are performed by the Federal Bureau of Investigation and by the Civil Service Commission and are prerequisite to employment in the atomic-energy program. Based on our experience of investigative load to maintain contractor employment, it is estimated that 23,100 investigations will be conducted in 1959; this compares to 25,000 in 1958.

OTHER COSTS AND REVENUES

The 1959 estimates include $6,687,000 representing the costs of performing services or supplying products which are sold by the AEC. These include such items as special reactor materials, heavy water being an example, irradiation services in the Commission's engineering and test reactors, and material processing and fabrication services. The revenues associated with the above costs are estimated at $9,982,000. In addition, the Commission will receive other revenues aggregating $17,738,000, the major portion of which ($11.5 million) will be received from operation of our communities.

CHANGES IN SELECTED RESOURCES

The final item in our 1959 budget represents the estimated increase in AEC operating inventories and in the forward financing of contracts. We are requesting $38,260,000 for these purposes. This amount incidentally is based on continuing the 3 months forward financing pattern established in 1958. Also provided for in this amount is $27.5 million for contracts to be let for space in private power reactors and privately constructed test reactors as part of the

new power reactor fuel cycle development program I mentioned earlier in connection with reactor development program estimates.

Mr. Chairman, I have touched briefly on the budget aspects of each of the Commission's programs. I stand ready, together with the Commission staff, to answer any questions you may have on these estimates.

NUMBER AND TYPES OF AEC PLANTS

Mr. CANNON. You say here that for plant acquisition and construction the estimates provide for obligations in 1959 of $380 million.

Mr. FLOBERG. Yes, sir; that is correct.

Mr. CANNON. You are following a definite policy, I suppose, and by plant acquisition you really mean plant construction; is that correct?

Mr. FLOBERG. Yes, sir; principally.

Mr. CANNON. There is no opportunity for you to purchase these plants ready for occupancy?

Mr. FLOBERG. Not at our major installations. Any exceptions would certainly be minor.

Mr. CANNON. How many completed plants do you have at the present time?

Mr. FLOBERG. Of all types?

Mr. CANNON. The plants to which you refer in this paragraph.

Mr. FLOBERG. It would be a tremendous number. These include the raw materials processing plants like the gaseous diffusion plants and the special nuclear production facilities. I would have to supply that for the committee.

Mr. CANNON. Would you supply it for the record and break down the categories which comprise the list?

Those are completed plants. How many do you have under construction at this time?

Mr. FLOBERG. Mr. Derry may be able to supply that information.

Mr. CANNON. How many are under construction at the present time?

Mr. DERRY. I can only speak, Mr. Chairman, in relation to dollars under construction. I would have to go to the construction record to detail the number of plants under construction. We have pieces of plants under construction or additions to the facilities in almost every-one of our places.

The total under construction is between $250 million and $300 million.

Mr. CANNON. Suppose you give us then not the amount of money involved but the number of plants referred to in this paragraph under construction at the present time.

Mr. CANNON. How many plants is it you plan to construct?

Mr. FLOBERG. Do you mean in the long-range building program?

Mr. CANNON. With special reference to the coming fiscal year.

Mr. FLOBERG. I could not give you the terms of the number of plants without supplying it for the record. There are things like test reactors, for example, or reactor experiments.

Mr. CANNON. You may break them down into categories and also indicate where these plants are located and supply that information for the record.

(The information referred to follows:)

The major AEC facilities and their locations are as follows:

PRODUCTION PLANTS

Feed materials processing plants at Fernald, Ohio; St. Louis, Mo.; and Weldon Spring, Mo.

Gaseous-diffusion plants and other production plants at Oak Ridge, Tenn.; Paducah, Ky.; and Portsmouth, Ohio.

Production reactors and other production plants at Hanford, Wash.; and Savannah River-Aiken, S. C.

Production plants in the weapons program are located at Kansas City, Mo.; Rocky Flats, Colo.; Albuquerque, N. Mex.; Burlington, Iowa; Amarillo, Tex.; Miamisburg, Ohio; Clearwater, Fla.

LABORATORIES

Argonne National Laboratory, Lemont, Ill.
Brookhaven National Laboratory, Yaphank, N. Y.
Knolls Atomic Power Laboratory, Schenectady, N. Y.
Los Alamos Scientific Laboratory, Los Alamos, N. Mex.
Oak Ridge National Laboratory, Oak Ridge, Tenn.
University of California Radiation Laboratory, Berkeley and Livermore, Calif.
Sandia Laboratory, Albuquerque, N. Mex.
Ames Laboratory, Ames, Iowa.
Bettis plant, Pittsburgh, Pa.

TEST INSTALLATIONS

National Reactor Testing Station, Idaho Falls, Idaho.
Nevada test site, Las Vegas, Nev.
Eniwetok Proving Ground, Eniwetok, Marshall Islands.

With respect to the Commission's production plants, aside from the final stages of completing certain expansions started several years ago at the Savannah River plant, there are no major expansions underway or provided for in the fiscal year 1959 plant acquisition and construction estimates. Projects underway or proposed for fiscal year 1959 relating to production plants are mainly for increased safety, reductions of fire hazards; incorporation of process improvements, and rounding out production capacities to meet new types of production requirements.

Laboratory construction underway or proposed for 1959 is mainly for technical facilities such as the alternating gradient synchrotron at Brookhaven National Laboratory, the high energy accelerator at Argonne National Laboratory, and the destroyer and advanced submarine reactor prototype construction at Knolls Atomic Power Laboratory. There is included in the estimates a new fuels technology center at Argonne National Laboratory to provide facilities for reactor fuel development. Also a new Sigma Laboratory at Los Alamos is currently under construction.

There are no major expansions to the Commission's three testing installations. The estimates do provide for additional land acquisition at the National Reactor Testing Station in Idaho, but this is in connection with increased assurance of radiation safety.

Mr. CANNON. Those are, I suppose, plans for your future construction and they are in response to new requirements.

What new requirements in particular are involved?

Mr. FLOBERG. I can give you some examples. As we gain knowledge in the civilian reactor field, for example, or as a theory of reactor construction appears suitable for proof, we build a reactor experiment which would be small scale. If the reactor experiment proves sufficiently successful, then the desire will arise to see whether this can be done on other than a laboratory basis with real engineering put into the thing and a small prototype reactor may be constructed.

Mr. CANNON. In former hearings, you have given us the number of reactors you had constructed. It later on developed that some of them are of a very minor nature. They are merely experiments in

the early stages; whereas, we got the idea that they were completed reactors in operation. We would like for you to differentiate if you will between those which are merely experiments and those which are actually in operation and producing at this time.

EURATOM PROGRAM

You mention here your program of cooperation with Euratom. Will you tell us briefly just what is Euratom.

Mr. FLOBERG. Euratom is another manifestation of the six European countries taking steps in the direction of European unity.

Mr. CANNON. Those are free nations and they do not include any Iron Curtain nations?

Mr. FLOBERG. Yes, sir, these are the same countries that are in the iron and steel community and in the common market. They are France, Italy, West Germany, Belgium, Holland, and Luxembourg.

Mr. CANNON. The United States is not officially a member of this organization?

Mr. FLOBERG. No, sir.

Mr. CANNON. But we are collaborating with it?

Mr. FLOBERG. We are interested as a matter of foreign policy in promoting its health and welfare.

Mr. CANNON. Who is paying the expense of operating Euratom?

Mr. FLOBERG. The member countries have financed it the same as they have financed the iron and steel community.

UNITED STATES CONTRIBUTION

Mr. CANNON. What amounts if any are paid by the United States?

Mr. FLOBERG. Up to now, none that I know of.

Mr. CANNON. What do you plan to spend?

Mr. FLOBERG. The program that was submitted by the President to the Congress a week or so ago contemplated the first phase of the Euratom nuclear power program. If this program is approved by the Congress and if the necessary legislative steps are taken, the total bill on the United States participation in the production of a million killowatts of electric power in Euratom would, in my estimate, be in the area of $100 million.

I would like to break down that figure because it is arguable. It can turn out to be wrong.

Part of the program that is contemplated in the submission is a joint research and development program to which the United States and Euratom would each contribute $10 million a year for 5 years. There is $50 million of the $100 million as far as United States participation is concerned.

Another part of the program concerns the guaranty of elements of the fuel cycle, particularly the fabrication costs of the fuel elements and the longevity of those fuel elements. This figure will vary depending on the performance of the fuel elements. If they turn out to give better performance than we are anticipating at the present time, the cost will be less; if they turn out to be not as good as we anticipate, the costs will be more. My guess is that these guaranties will cost the United States about $50 million, but it could be as little as $25 million or as much as $90 million.

Mr. CANNON. What character of cooperation and collaboration is offered by the United States? Is it money or materials or services or know-how or the secret results of our research?

Mr. FLOBERG. It is all of the first things you mentioned. It is know-how relative to reactors available today for construction of a type that can be used by these European countries; it is a solution to their power shortage problem which is very critical. It is guaranties of these fuel cycle elements, which are money in a sense.

It is promotion of this research and development program which will enable them to step up their own nuclear programs. There is one other element which is not actual out-of-pocket cost to the United States which should be mentioned, and that is an Export-Import Bank loan which will assist in the initial financing of this program.

Mr. CANNON. The United States makes the loan?

Mr. FLOBERG. The Export-Import Bank will lend $135 million at 4¾ percent interest, if I recall correctly.

Mr. CANNON. Do you expect to get it back?

Mr. FLOBERG. I do not run that bank but if they do not get it back, we are going to be disappointed.

Mr. CANNON. Is there any financial contribution to that?

Mr. FLOBERG. Yes, sir; the major contribution of about $215 million is made by Euratom. There is no capital cost contribution by the United States. This country's only financial participation is the long-term loan.

Mr. CANNON. Which you think we may get back?

Mr. FLOBERG. I think the bank's record is pretty good.

SECRET INFORMATION

Mr. CANNON. What about the results of our research at this time, secrets which we have learned and are using? Are they being made available to Euratom?

Mr. FLOBERG. No military secrets.

Mr. CANNON. Are secrets involved in the production of power?

Mr. FLOBERG. If they get the reactor in hand, they will obviously be able to analyze it. We must recognize that these people are capable people.

Mr. CANNON. And we give them valuable secrets?

Mr. FLOBERG. They will acquire valuable knowledge, because experience—operating experience—and know-how in the use of these reactors will educate them greatly.

Mr. CANNON. Do you think it safe to trust Euratom with secrets which are of real value?

Dr. LIBBY. If I may interrupt, there are relatively few secrets in civilian power these days. Since 1955, in Geneva, most of the information on civilian power has been declassified at least in principle.

Mr. CANNON. You say most of it but not all of it?

Dr. LIBBY. There is a hazy line between civilian power and military power where there is still some classification.

Mr. CANNON. In that event, do you not think we should exercise some care and discrimination in the information we contribute to Euratom?

Dr. LIBBY. That is right. There are no provisions in the Euratom arrangements for the transfer of classified data. I believe there are no provisions for transfer of secret information.

Mr. CANNON. Within the last month, France has been barely rescued from communistic control and even now is in close relationship with Russia. Do you think that we should adopt any precaution which would protect us in the event that 1 of these 6 nations should later on decide to go communistic?

Mr. FLOBERG. They would not get anything out of this program, Mr. Cannon, that is not available to them anyhow as far as knowledge is concerned. In fact, I doubt that they will get anything out of this program that the Soviet Union does not already have at least in a theoretical knowledge sense.

MILITARY AND CIVILIAN DEVELOPMENT OF ATOMIC ENERGY

Mr. CANNON. You are working then at the present time on atoms for peace, on the commercial development of atomic energy and also on military requirements and use of atomic energy. I believe you say that about 83 percent of your budget is for military purposes. Is there any sharp line of demarcation between military and civilian development of atomic energy?

Mr. FLOBERG. Not very sharp in some cases, Mr. Cannon, and this figure could be disputed. However, it has been calculated on a comparative basis and it indicates a trend toward relatively increased emphasis on civilian programs.

The know-how gained from the Naval reactor program, for example, has contributed tremendously to the civilian reactor program. In fact, one of the major contributions of the Naval program to the country is its indirect development of this civilian reactor program.

Mr. CANNON. Just as in the case of aviation which is one of the very few salvages we have been able to rescue from the holocaust of military preparation in which money, unless it is to save the Nation, is hopelessly poured down the rathole.

In your development of commercial civilian atomic energy, have you developed anything which has been turned over to American industry?

Mr. FLOBERG. Yes, sir, great quantities of information have been made available. There is a regular program of declassification of the Navy reactor technology and pamphlets are regularly published and distributed to American industry describing the technology which has been successful in different aspects of this military reactor program. I would say that so much of it is made available that the real problem is for American industry to digest it.

Mr. CANNON. Is American industry utilizing it?

Mr. FLOBERG. Yes, sir.

ATOMIC WEAPONS

Mr. CANNON. Do you envision progress in atomic energy which will ultimately produce the decisive weapon in warfare?

Mr. FLOBERG. I do not know if there will ever be a single defensive weapon. We have some pretty terrible ones right now.

Mr. CANNON. Are atomic weapons supplanting the conventional weapons?

Mr. FLOBERG. That is a question that should really be directed to the military people more so than to us. Certainly they are supplementing them, and in some cases I should think atomic weapons would be able to take the place of other weapons.

Mr. CANNON. We read in the Sunday newspaper yesterday that we are making some progress; that if we are able to stop 1 out of every 10 attacks of the enemy, then we are accomplishing something. What information can you give us on that?

Mr. FLOBERG. I cannot give you any information on it from authoritative sources.

Mr. CANNON. Do you think we are developing weapons which will stop more than 1 out of 10?

Mr. FLOBERG. I would certainly hope so, Mr. Cannon.

Mr. CANNON. We know if 1 out of 10 got through, Washington would be finished. The same would be true of any other city they attacked. So, we must stop 10 out of 10 to be effective. One single bomb would destroy this city and everything in and about it. What progress is being made?

Mr. FLOBERG. The nuclear components of antiaircraft weapons are a part of the weapons program we have described in this statement.

CONTROL AND TREATMENT OF DISEASE

Mr. CANNON. We are gratified at the attention which you are giving to research in biology and medicine, especially your developments in the cure and control of diseases.

We wondered just how far we can depend on assurances that you have given us that you are making progress in the control and treatment of disease. For example, we have been told now for quite awhile, 6 or 8 years that you either had achieved or you were on the verge of achieving the control of cancer. Every year when the Health, Education, and Welfare Department program comes upon the floor, they assure us that the prospect is in the very near future that we are going to control cancer. But up to this time they have never found out anything about the cause or the control of cancer. We are almost desperate in our research of cancer, and we hope that your research in atomic energy is of such a nature so as to offer some hope of success.

Dr. LIBBY. May I ask Dr. Dunham to speak to that subject?

Mr. CANNON. Dr. Dunham, will you tell us to what extent we can expect your program to develop a cure of these various diseases which now torment and decimate the human race?

Dr. DUNHAM. Mr. Chairman, our program in medicine and specifically in cancer, I believe, is making significant contributions toward solving this problem. I do not propose that isotopes themselves will offer the ultimate cure for cancer.

We have demonstrated that some of our isotopes, as substitutes for X-rays, are very useful in the treatment of cancer. We have used the large 184-inch cyclotron at Berkeley to destroy the pituitary gland in order to control the growth of cancer, particularly breast cancer. These are not ultimate solutions to the cancer problem, as you can well understand.

On the other hand, we are supporting quite a little work primarily in our own laboratories on the immunology of cancer. We have found

that cancer cells develop antibodies against them just like diphtheria toxin.

At the University of Rochester, they are putting a radioactive isotope into the antibodies against the cancer, and they are now getting almost enough of the radioactive iodine to the cancer so that it actually might begin to kill cancer cells.

Mr. CANNON. Do you think it is at least a possibility? Would you say it is a probability within the next year?

Dr. DUNHAM. No, sir, but it is an approach in which we have a particular interest because of our interest in radiosotopes.

Mr. CANNON. The information we get as a result of your research is sometimes more disturbing than reassuring. For instance, the newspaper reports that the use of X-rays, radiation, in the control of diseases, even to the slightest extent, may seriously affect the patient. As result a number of people to whom I have talked recently have been apprehensive about going to the dentist to have a tooth X-rayed.

Dr. DUNHAM. I think there is no question but that radiation in general is harmful. I think, on the other hand, there is no question but that, medically speaking, with X-rays, whether they are used in the treatment of cancer or in the diagnosis of heart disease, lung disease, or dental X-rays, taken with proper equipment that is properly taken care of, the individual gains infinitely more from the examination than he could ever lose by a small increase—and it is a very small fractional increase—in his chances of having some genetic effect on his germ cells.

AVAILABILITY OF URANIUM ORE

Mr. CANNON. Mr. Commissioner, in the matter of raw materials, we have had the impression heretofore that the material which was required was found rarely and only in restricted areas, and that the Government was making every effort in prospecting and in acquiring possible sources of uranium and other material, but today you speak of preventing the overexpansion of the domestic uranium industry.

How do you comport those two ideas, first, that we had difficulty securing enough, and are going abroad to find supplies, and here that we are overexpanding the domestic supply?

Mr. FLOBERG. Your previous impression was correct at the time. This was a commodity in short supply up until very recently, but within the last couple of years, some notable discoveries of ore deposits have been made within this country and now it is a raw material that is abundant.

Mr. CANNON. It is a very happy situation then that we need have no fear that essential material will be exhausted.

Mr. FLOBERG. Certainly under no short-term scale will it be exhausted. We are controlling the production of it so it will not be overproduced.

NUMBER AND LOCATION OF ORE PROCESSING MILLS

Mr. CANNON. You speak here of new mills—how many mills are in operation at this time?

Mr. FLOBERG. Could I ask Mr. Johnson to answer that question. He is the Director of the Raw Materials Division, Mr. Cannon.

Mr. CANNON. How many mills adapted to the production of material required in your program are in existence and operating at this time

Mr. JOHNSON. I believe there are approximately 18 either in operation or about to operate and another 5 that are in the construction stage, making a total of 23.

Mr. CANNON. Will you give us the location of those now in operation and the three which are being prepared and constructed.

(The information referred to follows:)

Uranium processing plants

MILLS OPERATING

Location	Company	Tons of ore per day	Estimated cost of mill
1. Rifle, Colo [1]	Union Carbide Nuclear Co	1,000	$8,500,000
2. Uravan, Colo	do	850	5,000,000
3. Grand Junction, Colo	Climax Uranium Co	350	3,088,000
4. Durango, Colo	Vanadium Corporation of America	430	813,000
5. Gunnison, Colo	Gunnison Mining Co	200	2,025,000
6. Maybell, Colo	Trace Elements Co	300	2,208,000
7. Monticello, Utah	Government owned	600	5,000,000
8. Salt Lake City, Utah	Vitro Uranium Co	550	5,500,000
9. Moab, Utah	Uranium Reduction Co	1,500	8,250,000
10. Mexican Hat, Utah	Texas-Zinc Minerals Co	775	7,000,000
11. Shiprock, N. Mex	Kerr-McGee Oil Industries	500	3,161,000
12. Grants, N. Mex	Anaconda Co	3,000	19,358,000
13. Edgemont, S. Dak	Mines Development, Inc	300	1,900,000
14. Tuba City, Ariz	Rare Metals Corporation of America	250	3,600,000
15. Split Rock, Wyo	Western Nuclear Corp	400	3,600,000
16. Ford, Wash	Dawn Mining Co	400	3,100,000
17. Fremont County, Wyo	Lucky Mc Uranium Corp	750	6,900,000
18. Grants, N. Mex	Homestake-New Mexico Partners	750	5,325,000
Subtotal		12,905	94,328,000

MILLS UNDER CONSTRUCTION OR CONTRACTED

1. Riverton, Wyo	Fremont Minerals, Inc	500	$3,500,000
2. Grants, N. Mex	Homestake-Sapin Partners	1,500	9,000,000
3. Do	Kermac Nuclear Fuels Corp	3,300	16,000,000
4. Do	Phillips Petroleum Co	1,725	9,500,000
5. Lakeview, Oreg	Lakeview Mining Co	210	2,600,000
Subtotal		7,235	40,600,000
Recapitulation:			
18 mills operating		12,905	94,328,000
5 mills under construction or contract.		7,235	40,600,000
Grand total		20,140	134,928,000

[1] Union Carbide Nuclear Co. also buys ore at Slick Rock, Colo., and Greenriver, Utah, as feed for the Rifle, Colo., mill.

NOTE.—Except for the Government-owned mill at Monticello, Utah, the above mills are privately owned and operated, and all are licensed to buy uranium ores from producers. The USAEC buys the concentrate product under the terms of contracts with each mill operator.

Mr. CANNON. Have any been abandoned?

Mr. JOHNSON. One plant at Naturita, Colo., has been abandoned. I believe that is the only one that has been abandoned to date.

Mr. CANNON. What was the occasion of discontinuing the operation of this mill?

Mr. JOHNSON. It was an obsolete plant. It had high costs because of its process.

Mr. CANNON. They could not be adjusted to cost us less than the five new mills in process of construction?

Mr. JOHNSON. The Commission does not build the mills. The Commission operates only one mill. That is at Monticello, Utah. This is a mill that was built during the war for the production of vanadium. It was in the hands of War Assets Administration.

Mr. CANNON. How many were in operation when that one was built?

Mr. JOHNSON. When that one was built, there were three plants in operation in the Colorado plateau for the production of vanadium.

Mr. CANNON. And the need of immediate production of material, which you could not depend upon from private industry to build, moved the Commission to supply the money?

Mr. JOHNSON. The Commission did not supply the money or build any of the mills, but it took the one plant that was built during the war as a vanadium plant by the Government and was in the hands of the War Assets Administration. The Commission acquired that.

Mr. CANNON. That is owned and operated by the Government or private industry?

Mr. JOHNSON. It is operated by a contractor on a fixed-fee basis.

Mr. CANNON. How does the cost of material produced at that mill compare with material you purchase elsewhere?

Mr. JOHNSON. It compares very favorably. Originally it was high cost. We have gotten the cost down to a very reasonable cost.

Mr. CANNON. Do you expect to maintain control of that one plant?

Mr. JOHNSON. We expect that the plant may be closed within 1½ or 2 years.

Mr. CANNON. Why not maintain it as a yardstick? You say it is being profitably operated, the material that you produce there compares favorably in cost with the material produced in any other mill. Why not keep it as sort of a TVA to keep these fellows down who might otherwise raise expense to the Government on essential war materials?

Mr. JOHNSON. With new process developments, we have the cost down to the point where domestic prices are at a low level—some of the larger plants are lower cost than the Monticello, and the ore supply tributary to this mill has declined so that it would seem on the longer range prospect that this would be one of the mills that should be closed.

Mr. CANNON. These five under construction or in prospect of construction—are they the same type of mills?

Mr. JOHNSON. They are essentially the same type as the mills that have been constructed during the past three years.

Mr. CANNON. All of them are built by private capital?

Mr. JOHNSON. By private capital, yes, sir.

Mr. CANNON. Who determines the location of these mills?

Mr. JOHNSON. The milling companies that finance the mills determine the location, and that location, for economic reasons, must be as close to the sources of ore as possible.

Mr. CANNON. Do you approve the location of a mill?

Mr. JOHNSON. We do not approve the location of the mill except that in the consideration of the negotiation of the price for the product we would not take into consideration any but the minimum cost of moving the material from the mines to the mill.

Mr. CANNON. I suppose you would tell us and, of course, I have every confidence that no action by the Atomic Energy Commission

is subject to any influence of any kind whatever, except your desire to establish as soon as possible the most effective production and distribution that can be made.

Mr. JOHNSON. That certainly has been our attitude, and I think we have carried it out successfully.

AVAILABILITY OF URANIUM ORE

Mr. CANNON. You testified last year, in no connection with that, because I accept your statement on that with the most implicit confidence, but you testified last year that mills processing uranium ore would possibly be competing with each other for ore by 1962. Mr. Rabaut at that time asked you about that. What is that situation today?

Mr. JOHNSON. That situation would still appear to hold true in some areas.

Mr. CANNON. Why not all areas?

Mr. JOHNSON. In some areas there are ample supplies of ore to sustain operations not only to 1962 but for a much longer period. In some of the older areas ore supplies are being exhausted and the rate of discovery may not be adequate to maintain the established normal rate of operations. When that happens, the mills tributary to that area will be competing for ore.

However, in the last year, I would say that the ore supply situation in the United States has greatly improved from the standpoint of quantity of supplies and the prospect of being able to sustain long-term operation at a high rate; whereas, a few years ago, we were dependent, for more than 90 percent of our uranium supplies, on overseas areas. We now are the largest producer in the world, and with a relatively short lead time, I believe we could take care of most any type of military requirement that might arise.

LICENSING SALE OF URANIUM

Mr. CANNON. To what extent have you realized your licensing program?

Mr. JOHNSON. The licensing program is operative. However, as I believe is mentioned in that report, there are no major inquiries for uranium for industrial power at the present time. There are inquiries for small quantities from countries like Germany, Japan, and elsewhere.

The opening up of the market to the American uranium producer at this time has been very largely limited to the benefit of being in on the ground floor by supplying small quantities for research and development purposes. These orders may lead to larger orders as the atomic power programs of these foreign countries develop.

Other countries such as Canada are also licensing their private producers to sell abroad, subject to appropriate controls on end use.

I think what we have here is not, as yet, any important commercial market but the beginnings of that important commercial market, and I think that our industry can assess the future of that market, can become established so that they can compete with other countries better by being able now to undertake their own attempts to sell the material, to respond to inquiry, and to study the development of this industry.

COMPETITION IN THE PROCESSING OF URANIUM

Mr. CANNON. Mr. Rabaut asked you last year whether you felt that by 1962 there would be real competition in the processing of uranium and whether there would be a market. What would you say to that now?

Mr. JOHNSON. Yes but the problem is somewhat changed in many of these areas with the limited amount of purchasing that the Commission is now undertaking. In other words, as the Commissioner has mentioned in his opening statement, we are attempting to limit domestic production, having taken a production rate that will meet the presently established procurement goals.

Mr. CANNON. Summing it up, is there real competition at this time? Or will there be real competition by 1962?

Mr. JOHNSON. There will be competition in certain areas.

PRICE OF URANIUM

Mr. CANNON. Does that mean you will get your material at a lower price?

Mr. JOHNSON. No. Beyond 1962, the Commission has established a price of $8 per pound for uranium which is considerably lower than existing prices and is designed to support the uranium industry and to provide adequate markets for the independent producers. With regard to the competition, our major problem today is to see that, with only limited procurement by the Commission, there is going to be adequate markets for the independent producers, those who are not associated with the mills. Our major efforts at the present time in contract negotiations and contract renegotiations is to provide the opportunity for an equitable distribution of the limited market between the properties controlled by milling companies and the properties controlled by the independent miners.

Mr. CANNON. One of the handicaps under which we operate in competition with Russia, is that Russia not only has slave labor, allocating its labor and dictating its wages, but it also is the entrepreneur. It owns all of these properties. It pays no dividends or profits to anybody. To what extent is that a handicap? How much more are we going to have to pay for raw material as a result of our capitalistic system as compared to Russia under her totalitarian system? Would you say Russia has the advantage?

There is no question with labor and the plants and the mills belonging to the Government they could produce at a lower cost to the Government than we can produce when our Government must buy from private enterprise.

Mr. JOHNSON. I am one who believes that American private enterprise operating under a free competitive system can get costs down lower than a Government operation. I have seen it work in the United States as between a Government operation and a private industry. I am certain that it will work between the private industry operation in the United States and a Russian Government operation.

Mr. CANNON. You would say that we can build a submarine as cheaply as Russia can? Russia has 500 submarines. It does not cost them as much as we pay.

Mr. JOHNSON. A friend of mine in the 1930's spent 10 years in Russia as a consultant on the 5-year mining programs for gold. His report at that time was that the Russian method of operation was extremely inefficient from a management standpoint, with spies at the various mines. Management was trying to pass the buck. What the situation is today, I do not know.

RUSSIAN CAPABILITIES

Mr. CANNON. One of our great mistakes has been underrating Russia. I remember very well at the beginning, the Russians were reported to have no mechanical talent; that we could send them over a fine automobile that would run 2 or 3 days and if it got out of order they could not repair it; that they had no mechanical turn of mind or any scientific acumen, and still they have been putting up the sputniks regularly without a single failure so far as we know. And every satellite we have tried to put up lately has been a failure. Just last week, after all of the experience we have had and after all of the money we had spent, after all the know-how we had put into it and after all of the capitalistic advantages to which you refer, we could not put one into the sky that weighed 20 pounds, but they could put one in the skies weighing a ton and a half. So let's not underestimate Russia.

I know it is very comforting for us to sit back and think we know so much more, but when it comes to practical results, we might be surprised just as we were surprised when they put up the sputniks.

Mr. JOHNSON. I am not depreciating their technical abilities, but when it comes to labor and how efficiently their operations are conducted, I think that I would be surprised if we cannot effectively compete with them. However, if they do not pay the labor and there are no profits, how they figure their costs is another matter.

Mr. CANNON. That means if they do not pay their labor the price they ought to pay them, and if they do not have to make a profit on their investments, then we at least over here ought to see that we have as much competition among those who produce the essentials in this program as possible.

Mr. JOHNSON. I do not believe there will be ore shortages where the mills are producing.

Mr. CANNON. Will we get it at as low a price as competition would provide? American industry everywhere is striving to get a monopoly. In every branch of American industry they are trying to establish monopolies. When they get monopolies, you cannot go anywhere else and you know what happens then.

We think the private industry ought to do the great majority of this business, but we ought to keep enough of it and keep competition going so that we will have a yardstick and so that we will be able to secure essentials without too much profiteering.

May I go off the record here for a moment to ask a question or two, Commissioner?

(Discussion off the record.)

Mr. CANNON. The committee will stand in recess until 2 o'clock this afternoon.

MONDAY AFTERNOON SESSION

Mr. RILEY. The committee will come to order.

JUSTIFICATION MATERIAL FOR OPERATING EXPENSES

We will insert pages 1 through 12 of the budget justifications for 1959 in the record.

(The pages referred to follow:)

GENERAL STATEMENT FOR OPERATING EXPENSES

ESTIMATE OF APPROPRIATION

This book contains the budget estimates for the appropriation "Operating expenses, Atomic Energy Commission" for fiscal year 1959. The estimates provide for total obligations of $2,467,594,000 to be funded by (1) a new appropriation of $2,418 million and (2) the reappropriation of $49,594,000 in unobligated balances remaining at the end of fiscal year 1958.

ESTIMATES OF COSTS AND OBLIGATIONS

The estimates for the appropriation, "Operating expenses," are stated in terms of accrued costs for each of the AEC's 11 operating programs. "Accrued costs" denotes the actual application of labor, materials, equipment and services to the program during the year, but excludes depreciation of facilities used in the operation. The AEC does, however, maintain accounts for depreciation for the purpose of determining total costs of production and for use in establishing prices for services rendered or products sold to others.

Revenues are obtained from the operation of AEC-owned communities and housing, from the sale of products and services performed for others, and from other miscellaneous sources. These revenues are identified and summarized under the section titled, "Revenues Applied." Revenues are deducted from the total of the accrued costs for the operating programs in determining the amount of the net costs to be financed by congressional appropriations.

The net costs of operation are reconciled to the total obligations to be incurred during the year by estimating the buildup or decrease during the year of the resources that are to be applied to future years' operations. These estimates are included in the section titled, "Increase or Decrease (—) in Selected Resources," and include inventories and undelivered orders.

The table on the next page summarizes the accrued costs for each program and the total obligations for the fiscal years 1957, 1958, and 1959. The detailed justifications beginning on page 13 present the programs in the same order as they appear on this summary table.

Summary of accrued operating costs by program reconciled to obligations

	Actual fiscal year 1957	Estimate fiscal year 1958	Estimate fiscal year 1959
Accrued costs by program:			
Raw materials	$397,836,008	$596,901,000	$680,000,000
Special nuclear materials	581,602,626	569,800,000	580,400,000
Weapons	323,285,197	448,000,000	547,600,000
Reactor development	266,550,778	329,300,000	420,300,000
Physical research	59,344,215	71,471,000	90,000,000
Biology and medicine	31,519,984	36,000,000	43,000,000
Training, education, and information	7,815,945	16,850,000	21,225,000
Community	17,777,637	17,921,000	15,000,000
Program direction and administration	38,034,044	44,704,000	46,600,000
Security investigations	8,442,087	7,374,000	6,242,000
Other costs	6,619,603	7,298,000	6,687,000
Adjustment of prior years costs	−82,832	0	0
Total accrued costs	1,738,745,292	2,145,619,000	2,457,054,000
Less revenues applied	34,573,859	30,502,000	27,720,000
Net accrued costs	1,704,171,433	2,115,117,000	2,429,334,000
Increase or decrease (—) in selected resources	68,785,462	85,892,221	38,260,000
Total obligations for operating expenses	1,772,956,895	2,201,009,221	2,467,594,000

FINANCING OF OBLIGATIONS

The fiscal year 1959 budget estimate proposes that the obligations for fiscal year 1959 totaling $2,467,594,000 be financed (1) by new appropriations totaling $2,418 million and (2) by the reappropriation of $49,594,000 in unobligated balances remaining at the end of fiscal year 1958. Obligations in fiscal years 1957 and 1958 were financed in part by new appropriations, by transfers from other appropriations and by the reappropriation of unobligated balances of prior year appropriations. The following table summarizes the financing of obligations for fiscal years 1957, 1958, and 1959:

	Actual fiscal year 1957	Estimate fiscal year 1958	Estimate fiscal year 1959
Funds available:			
Unobligated balance at beginning of year	$63,137,269	$37,932,221	$49,594,000
Appropriation	1,740,400,000	2,215,470,000	2,418,000,000
Transfer from plant acquisition and construction	11,500,000	0	0
Comparative transfers to other accounts	−4,148,153	−2,799,000	0
Adjusted amount available for obligation	1,810,889,116	2,250,603,221	2,467,594,000
Less unobligated balance at end of year	37,932,221	49,594,000	0
Obligations incurred	1,772,956,895	2,201,009,221	2,467,594,000

UNOBLIGATED BALANCE OF PRIOR YEAR APPROPRIATION APPLIED TO FISCAL YEAR 1959 REQUIREMENTS

The unobligated balance of $49,594,000 which has been applied to the fiscal year 1959 requirements includes a deferral of requirements amounting to $27,627,000 on the cooperative arrangements program for civilian power which were funded in fiscal year 1958 but on which obligations will not take place until fiscal year 1959 and $21,967,000 representing 1958 savings through cost underruns and programatic changes in fiscal year 1958.

EXPENDITURES FOR OPERATING EXPENSES

Expenditures for operating expenses for fiscal year 1959 are estimated at $2,390 million an increase of $330 million over the estimate of $2,060 million in fiscal year 1958. Actual expenditures for operating expenses in fiscal year 1957 totaled $1,726,039,909. Unexpended balances are expected to increase from $685,328,399 at the beginning of fiscal year 1957 to an estimated $921,847,489 at the end of fiscal year 1959 as shown in the following table which depicts the amounts available for expenditure, the expenditures for each year, and the unexpended balances at the end of each year.

	Actual, fiscal year 1957	Estimate, fiscal year 1958	Estimate, fiscal year 1959
Funds available for expenditure:			
Unexpended balance, beginning of year	$685,328,399	$738,377,489	$893,847,489
Appropriation	1,740,400,000	2,215,470,000	2,418,000,000
Transfer from plant acquisition and construction	[1] 38,688,999	0	0
Total funds available	2,464,417,398	2,953,847,489	3,311,847,489
Less: Expenditures	1,726,039,909	2,060,000,000	2,390,000,000
Unexpended balance, end of year	738,377,489	893,847,489	921,847,489

[1] Includes $27,188,999 for unpaid obligations as of June 30, 1956, for equipment not included in construction projects transferred under authority contained in the 1957 appropriation act, and $11,500,000 to finance contracts for procurement of feed materials from contractor-owned plants in lieu of construction of plants by the Government.

HIGHLIGHTS OF OPERATING PROGRAMS

As shown in the table on page 2, estimates are prepared and presented for (1) each of the Commission's major operating programs, (2) revenues, and (3) change in selected resources. The highlights of each of these estimates are:

OPERATING COSTS

1. *Raw materials program.*—Operating costs for the raw materials program are estimated at $680 million in 1959, compared with the estimated 1958 costs of $596.9 million and actual 1957 costs of $397.8 million. The raw materials program includes the procurement of uranium concentrates and ores from foreign and domestic sources and related costs for resource evaluation and process development. The substantially increased quantities of uranium concentrates to be procured in fiscal year 1959 will come principally from the United States and Canada.

2. *Special nuclear materials program.*—Operating costs for the special nuclear materials program are estimated at $580.4 million in 1959, compared with the estimated 1958 costs of $569.8 million and actual 1957 costs of $581.6 million. The production of special nuclear materials begins with the refinement of uranium concentrates for diffusion plants or reactors. The isotope uranium 235 is extracted in gaseous diffusion plants at Oak Ridge, Tenn., Paducah, Ky., and Portsmouth, Ohio. Plutonium is synthesized in the reactors at Hanford, Wash., and Savannah River, S. C. As production of special nuclear materials increases this output will be accompanied by lower unit processing costs. Improvements in processes for each manufacturing step are aimed at further decreases in unit costs, increases in yield and improvements in the quality of products.

3. *Weapons program.*—Operating costs for the weapons program are estimated at $547.6 million in 1959, compared with estimated 1958 costs of $448 million and actual 1957 costs of $323.3 million. The weapons program includes the production of atomic weapons, the development, design and testing of new weapons types, and the maintenance of stockpiled weapons in a state of constant readiness. Weapons testing will continue at the test sites in Nevada and the Pacific islands, as developments may warrant. A program for nonmilitary uses of nuclear explosives is also included in the estimate at $0.4 million in 1958 and $3 million in 1959.

4. *Reactor development program.*—Operating costs for the reactor development program are estimated at $420.3 million in fiscal year 1959 compared to estimated fiscal year 1958 costs of $329.3 million and actual fiscal year 1957 costs of $266.6 million. Emphasis will continue to be placed on advancing power reactor technology including fuel cycle development in order to assist industry to achieve large-scale generation of economic electrical energy from atomic reactors. Cooperative endeavors between the Commission and industrial groups will be stressed.

Work will also be continued on reactors to propel naval and maritime vessels, military aircraft missiles and satellites, and also to meet military needs for power in remote areas. This research also provides information useful in the development of civilian power reactors. Efforts will be accelerated on research and development work for the controlled thermonuclear project to eventually achieve production of power through the fusion process.

The estimates also cover generalized reactor systems research and development applicable to many reactor designs, a program of reactor safety, a program for development of reprocessing and waste disposal methods, and operation of experimental facilities at the National Reactor Testing Station in Idaho.

5. *Physical research program.*—Operating costs for physical research are estimated at $90 million in 1959 compared with estimated 1958 costs of $71.5 million and actual 1957 costs of $59.3 million. The physical research program consists of theoretical and experimental investigations required to support both the Commission's immediate and longer range objectives for utilizing nuclear energy. Every advance achieved in the past can be traced back to similar laboratory investigations. In the atomic energy program, research plays a relatively more important role than in other industrial operations of comparable size. The

phenomena dealt with are close to the frontiers of science. Unusual materials are employed, and their nuclear as well as their chemical and physical properties must be determined. The temperatures and radiation densities at which these materials are used are outside the range of previous experience in industrial technology.

Research is carried on both by Commission laboratories and by some 100 universities and other independent institutes.

6. *Biology and medicine program.*—Operating costs for biology and medicine are estimated at $43 million for 1959, compared with estimated costs of $36 million in 1958 and actual costs of $31.5 million in 1957. Primary program emphasis will continue to be placed on the protection of the health and safety of atomic energy plant workers and the general populace from the hazards of atomic energy operations. Research on radioactive fallout problems and related research in the biological hazards of radiation will be expanded. While the program will be directed toward the fulfillment of requirements developed under production and weapons testing operations, additional emphasis will be placed on research efforts of pertinence in the rapidly growing field of industrial uses of atomic energy. Technical guidance and standards will continue to be furnished for the safety and health aspects of production and weapons test activities. Close liaison will continue to be maintained with the Federal Civil Defense Administration as well as with other agencies performing functions interrelated with Commission biomedical interests.

7. *Training, education and information program.*—Operating costs for the training, education and information program are estimated at $21.2 million in fiscal year 1959 compared to estimated fiscal year 1958 costs of $16.8 million and actual fiscal year 1957 costs of $7.8 million. This program is directed toward broadening the base of nuclear knowledge and technology both at home and abroad.

The estimates include the costs for operation of the Commission's International School of Nuclear Science and Engineering at Argonne National Laboratory, the Oak Ridge School of Reactor Technology, the Oak Ridge Institute of Nuclear Studies, and the Puerto Rican Training Center; costs for carrying out various fellowship programs in the field of nuclear energy technology; grants to schools for educational programs for acquiring reactor training equipment, teaching aids, and laboratory equipment; for special training for high school and university teachers; and for fabrication and processing of special nuclear materials and other materials on loan to educational institutions. The Commission will participate in a Second International Conference on Atomic Energy, and in other conferences and overseas nuclear energy exhibits. Assistance will be given to foreign nations by making special studies on the prospective economic feasibility of nuclear powerplants for foreign countries. This program provides for broadening the dissemination of information on matters relating to atomic energy through publications, operation of libraries, operation of the American Museum of Atomic Energy at Oak Ridge, and use of traveling atomic energy exhibits.

This program also provides for development of practical application of radioisotopes in industry, medicine, and agriculture. The estimates include the costs of participation with private organizations in research and development to exploit the practical application of radioisotopes to industrial manufacturing methods, processes, and products; establishment of radioisotopes technology training institutes; development of a program to encourage and provide incentives for private production of materials needed for full-scale exploitation of the application of radioisotopes and nuclear radiation; and acceleration of the development of economic application of high level radiation to industrial processes.

8. *Community.*—The Commission operates under contract the communities of Los Alamos, N. Mex., Oak Ridge, Tenn., and Richland, Wash., and provides limited housing services at Sandia, N. Mex., and in the uranium mining area. Based on anticipated disposal of a substantial proportion of AEC-owned real estate at Oak Ridge and Richland and resultant reductions in requirements for property maintenance, the estimates for fiscal year 1959 reflect a reduction in operating costs. Estimated costs of $15 million will be incurred in fiscal year 1959 for community operations compared with estimated fiscal year 1958 costs of $17.9 million and actual fiscal year 1957 costs of $17.8 million.

9. *Program direction and administration.*—Under the general heading of program direction and administration are grouped together the salary costs and other expenses of Commission personnel engaged in general management, executive direction, and technical supervision of program operations; the negotiation and administration of contracts; and other related administrative activities. The corresponding costs for Commission personnel engaged in nonadministrative

activities directly related to a specific program are included in that program, as for example, personnel safeguarding classified shipments or providing fire protection for a community. Expenses of personnel and travel of other Government agencies doing work for the Commission are treated as contractual services, are not included in the AEC detail of personal services and travel, and are not included in limitation amounts.

Estimated costs of $46.6 million will be incurred in fiscal year 1959 for program direction and administration, compared with estimated fiscal year 1958 costs of $44.7 million and actual fiscal year 1957 costs of $38 million. No increase in personnel is budgeted under this program in fiscal year 1959. The increase of $1.9 million provides for salaries and travel and other costs on a full-year basis for the attained strength at June 30, 1958, as well as operating costs at the Germantown headquarters for a full year, including 9 months occupancy of the additional wing now under construction. The costs in fiscal year 1959 represent 1.9 percent of total operating costs, compared with an estimated 2.1 percent in fiscal year 1958 and 2.2 percent in fiscal year 1957.

10. *Security investigations.*—Estimated costs of security investigations in fiscal year 1959 are $6.2 million compared with estimated fiscal year 1958 costs of $7.4 million and actual fiscal year 1957 costs of $8.4 million. Under provisions of the Atomic Energy Act, persons to be employed on work involving access to restricted data are required to be cleared for security purposes based on investigations by the Civil Service Commission or the Federal Bureau of Investigation.

11. *Other costs.*—This program includes costs incurred by the Commission in furnishing materials and services to industrial organizations and other private parties apart from those which it provides normally for its own basic program. These costs are incurred only upon the request of others. Charges are made for these materials and services and the revenues derived are included under "Revenues applied." Other costs are estimated to be $6.7 million in fiscal year 1959, compared with $7.3 million in fiscal year 1958 and $6.6 million in fiscal year 1957. The lower estimate in fiscal year 1959 reflects a decrease in the sale of products.

12. *Revenues applied.*—This program includes (1) income from sales and lease of products, and services rendered; (2) revenues from communities; and (3) other miscellaneous income items. These revenues are applied against Atomic Energy Commission appropriation requirements. Revenues are estimated at $27.7 million for fiscal year 1959, compared to an estimate of $30.5 million for fiscal year 1958, reflecting principally decreases in sales of special reactor materials to foreign countries and lower community revenues resulting from community disposal programs at Oak Ridge, Tenn., and Richland, Wash. Actual revenues for fiscal year 1957 were $34.6 million.

13. *Selected resources.*—This program includes inventory stocks held by the AEC and its contractors, collateral funds, and goods and services on order or under contract. The appropriation requirements for these items are based on the changes in balances from the previous fiscal year. Selected resources at the end of fiscal year 1959 are estimated at $910.4 million as compared with $872.1 million in fiscal year 1958 and $786.2 million in fiscal year 1957. The increase of $38.3 million in fiscal year 1959 is related principally to higher operating levels for weapons production, expanded research and development effort on the reactor development and weapons programs and increases in funding levels for the cooperative arrangements program for civilian power.

JUSTIFICATION FOR PROPOSED LANGUAGE CHANGES, OPERATING EXPENSES

The proposed changes in the appropriation language for "Operating expenses" are described below. Language enclosed in black brackets indicates proposed deletions; language italicized indicates proposed insertions.

1. "purchase of newspapers and periodicals (not to exceed [$5,000] *$6.000*);".

This change is due primarily to increased subscription rates for newspapers and periodicals and the need for both United States and foreign newspapers and periodicals at foreign offices of the Commission.

2. "not to exceed [$3,700,000] *$3,850,000* for expenses of travel, including expenses of attendance at meetings or organizations concerned with the function or activity for which this appropriation is made;".

This change is in accordance with the estimated requirements in fiscal year 1959 for expenses of travel as set forth in the detailed estimates.

3. "not to exceed [$46,100,000] *$46,800,000* for personal services;".

This change is in line with the estimated requirements in fiscal year 1959 for personal services as set forth in the detailed estimates.

4. "purchase (not to exceed [four hundred and sixty] *four hundred and thirty-five* for replacement only, including [two] *one* at not to exceed $3,500 [each]) and hire of passenger motor vehicles;".

This provides for the fiscal year 1959 requirement for the replacement of 435 passenger motor vehicles. These vehicles are eligible for replacement under the replacement standards established by the General Services Administration. The passenger vehicle fleet at the beginning of fiscal year 1959 will consist of 2,148 vehicles. Of this number, 435 will be disposed of and replaced.

The General Government Matters Appropriation Act for fiscal year 1958 establishes a limitation of $1,500 on the purchase of a passenger motor vehicle unless otherwise specifically provided. The proposed language would provide authority for purchasing 1 passenger motor vehicle at a cost of not to exceed $3,500. An additional large sedan is required at headquarters to provide transportation of the Commissioners to and from official meetings in Washington.

5. "[$2,371,000,000] *$2,418,000,000*, together with the unexpended balances, as of June 30, [1957] *1958*, of prior year appropriations made available under this head to the Atomic Energy Commission * * *".

This change provides for the insertion of the amount requested to be appropriated for fiscal year 1959, and continues to provide for the reappropriation of unexpended balances which has been in effect since 1950.

JUSTIFICATION FOR PROPOSED LANGUAGE CHANGES FOR ADMINISTRATIVE PROVISIONS

The proposed change in the language for the administrative provisions is described below. Language enclosed in black brackets indicates proposed deletions; language italicized indicates proposed insertions.

1. "Any appropriation available under this or any other Act to the Atomic Energy Commission may initially be used subject to limitations in this Act during the fiscal year [1958] *1959* to finance the procurement of materials, services, or other costs which are a part of work or activities for which funds have been provided in any other appropriation available to the Commission: * * *".

The change continues, in fiscal year 1959, this provision which has been in effect since fiscal year 1953.

Mr. RILEY. I believe you testified this morning that the new appropriation was $2.418 billion.

Mr. FLOBERG. That figure is correct.

Mr. RILEY. The reappropriation is $49,594,000, making the total 1959 request $2,467,594,000, which is an increase of some $214,191,179.

AMENDMENTS TO 1959 BUDGET

I believe you have amended your original budget by $130 million. Is that right?

Mr. FLOBERG. Yes, sir, that is correct.

Mr. RILEY. What are the main reasons for this amended request?

Mr. FLOBERG. The amended request really incorporates developments that took place between the time the budget was originally formulated last fall and the time when the amendments were submitted about 2 months ago. There were some technical advances and other items of progress that made appropriate a reappraisal of some of the programs in order to take advantage of some of the fast-moving developments in this field. That is what the increase reflects, Mr. Riley.

Mr. RILEY. In other words, you have advanced in certain categories faster than you thought you could when you made up the original estimates.

Mr. FLOBERG. In some cases that is correct, and in other cases it is correction of estimates that time showed could be refined. Gen-

erally speaking it is corrections of that kind which are incorporated in the increase.

Mr. RILEY. Could you put in the record at this point a breakdown on those increases?

Mr. FLOBERG. Yes, sir, we will be glad to do it.

(The information requested follows:)

	In budget	Revised estimate	Difference
Program by activities:			
1. Raw materials	$670,000,000	$680,000,000	$10,000,000
2. Special nuclear materials	592,000,000	580,400,000	−11,600,000
3. Weapons	532,600,000	547,600,000	15,000,000
4. Reactor development	351,000,000	420,300,000	69,300,000
5. Physical research	71,500,000	90,000,000	18,500,000
6. Biology and medicine	43,000,000	43,000,000	
7. Training, education and information	18,500,000	21,225,000	2,725,000
8. Community	15,000,000	15,000,000	
9. Program direction and administration	46,600,000	46,600,000	
10. Security investigations	7,000,000	6,242,000	−758,000
11. Other costs	6,687,000	6,687,000	
Total program costs	2,353,887,000	2,457,054,000	103,167,000
12. Revenues applied	−29,720,000	−27,720,000	2,000,000
Net program costs	2,324,167,000	2,429,334,000	105,167,000
13. Relation of costs to obligations:			
Costs financed from obligations of other years, net (−)	−26,167,000		64,427,000
Obligations incurred for costs of other years, net		38,260,000	
Total program (obligations)	2,298,000,000	2,467,594,000	169,594,000
Appropriation	2,288,000,000	2,418,000,000	130,000,000
Reappropriation	10,000,000	49,594,000	39,594,000

BUDGET BUREAU ACTION ON ORIGINAL ESTIMATES

Mr. RILEY. Did the Budget Bureau reduce your original estimate when you went before them?

Mr. FLOBERG. Yes, sir; the original figures which were submitted to the Bureau were reduced by some factor.

Mr. RILEY. Could you tell the committee what was reduced or eliminated and about how much they reduced your original estimate?

Mr. MCCARTHY. The base estimates were not reduced from our submission, but I believe that in the amendment certain of the items were reduced by about $250 million from what we submitted to the Bureau including both plant and operating expenses.

Mr. RILEY. Was this $130 million you put in approved by the Budget Bureau?

Mr. MCCARTHY. Yes, the $130 million was approved by the Bureau of the Budget.

Mr. RILEY. Was that a restoration of previous cuts?

Mr. MCCARTHY. No. In the budget last fall we did not take any reduction. The reduction we are talking about was in the amendment transmitted in March. The amounts which were allowed were for new items, as Mr. Floberg has explained, which came along since the original estimate was approved last fall.

Mr. RILEY. Will you put in the record the items which were reduced or eliminated?

Mr. MCCARTHY. I will be glad to, sir.

(The information requested follows:)

Fiscal year 1959 budget amendment submitted to Bureau of the Budget and to the Congress

[In thousands]

Program	Amendment request to the Budget Bureau	Amount submitted to Congress	Difference
Operating expenses appropriation:			
Raw materials	$12,206	$10,000	−$2,206
Special nuclear materials	−11,600	−11,600	0
Weapons	30,880	15,000	−15,880
Reactor development	109,017	69,300	−39,717
Physical research	20,000	18,500	−1,500
Training, education, and information	2,725	2,725	0
Security investigations	−758	−758	0
Revenues	2,000	2,000	0
Increase in selected resources	123,824	64,427	−59,397
Total obligations	288,294	169,594	−118,700
Less reappropriation	39,594	39,594	0
Appropriation request	248,700	130,000	−118,700
Plant acquisition and construction appropriation:			
Special nuclear materials	4,000	−1,000	−5,000
Weapons	5,000	5,000	0
Reactor development	169,582	69,350	−100,232
Physical research	18,006	9,606	−8,400
Training, education, and information	2,100	2,100	0
Minor reductions in prior-year projects	−150	−1,056	−906
Appropriation request	198,538	84,000	−114,538
Total appropriation request	447,238	214,000	−233,238

Details of plant acquisition and construction by projects

Special nuclear materials construction:				
59-a-3	Reduction to fire hazards, phase II	$4,000	$4,000	0
59-a-1	Modifications to production facilities for processing nonproduction spent fuels	0	−5,000	−$5,000
	Total, special nuclear materials	4,000	−1,000	−5,000
Weapons construction:				
59-b-1	Weapons production and development plant	5,000	5,000	0
Reactor development construction:				
57-c-2	Research and development test plant	6,980	6,980	0
58-c-5	Test installations for classified project	1,000	0	−1,000
58-c-6	Project Sherwood plant	2,250	2,250	0
59-d-11	Project Sherwood plant	3,000	2,000	−1,000
58-c-13	Argonne boiling reactor (Arbor)	5,000	[1]−8,000	−13,000
58-111	Cooperative power reactor demonstration program	9,732	0	−9,732
59-d-3	Fast reactor safety testing station, Nevada test site	−1,500	−1,500	0
59-d-5	Hot cells	1,500	1,500	0
58-c-16	Destroyer reactor plant	−3,880	−3,880	0
59-d-x	Modification and addition to ANP ground test facilities, area 1, Idaho	1,500	0	−1,500
59-d-x	Small plant reactors	30,000	0	−30,000
59-d-6	Army package power reactor No. 2	3,000	3,000	0
59-d-x	Prototype tanker propulsion plant	7,000	0	−7,000
59-d-7	Modification of OMRE, EBWR, and borax	2,500	2,500	0
59-d-x	Heavy water power reactor	2,500	2,500	0
59-d-8	Heavy water component test reactor	8,000	8,000	0
59-d-9	Fuels technology center addition, ANL	5,000	5,000	0
59-d-x	Materials engineering test reactor	35,000	[2] 0	−35,000
59-d-10	Gas-cooled power reactor	51,000	51,000	0
58-c-11	Sodium reactor experiment (SRE) modification	0	−2,000	−2,000
	Total, reactor development	169,582	69,350	−100,232
Physical research construction:				
59-c-2	CP-5 reactor improvement	500	500	0
59-c-3	Metals process development plant, Ames	1,900	0	−1,900
59-c-4	Metals and ceramics research building, ORNL	6,500	0	−6,500
57-d-1	High energy accelerator, Argonne	2,000	2,000	0
56-c-1	Particle accelerator program	7,106	7,106	0
	Cambridge	1,700	1,700	0
	Princeton	5,406	5,406	0
	Total, physical research	18,006	9,606	−8,400
Training, education, and information construction:				
59-g-2	International Atomic Energy Agency research reactor and laboratories	500	500	0
59-g-3	Gamma process development irradiator	1,600	1,600	0
	Total, training, education, and information	2,100	2,100	0

[1] Reflects deobligation of fiscal year 1958 funds.
[2] Funded under "Operating expenses" appropriation.

TESTING ATOMIC DEVICES

Mr. RILEY. Would you give us an idea of your present thinking on the testing of atomic devices and tell us about how much money is in the budget for testing? If any part of this is classified, we can go off the record.

Mr. FLOBERG. I would like to have General Starbird, the Director of Military Application, make some comments.

General STARBIRD. Sir, we have funds in the budget for fiscal year 1959 for the carrying on of nuclear weapons testing. That money is to cover several activities including completion of the series which is now underway in the Pacific, and which will run until about the middle of August.

Also covered is, of course, the activity of keeping our proving ground in the Pacific in standby status between operations.

Our current thought, sir, is that we still have many, many requirements for the military which need be tested. We must therefore go ahead with preparations for the carrying out of tests until and unless there is some overall disarmament plan adopted.

Does that answer your question?

Mr. RILEY. Yes.

Do you feel you are making any worthwhile progress in refining and improving these weapons?

General STARBIRD. It is more than just refining and improving. We are moving into a period where the other man has new methods of offense coming.

Just to mention some of them, submarine offense, missile offense, and the like.

There is needed for our defense a whole series of new atomic warheads for the new carriers in order to protect this country. We cannot make these devices without testing them. Once we quit testing, then we will be limited to just minor refinement of warheads which we have on hand.

Mr. RILEY. Do these tests have in mind also the improvement as to fallout?

General STARBIRD. They do, sir. One of our main objectives in this series, in the prior series to a lesser extent but also in the future series, is to develop weapons of less proportional fission yield; in other words, weapons you can control more accurately with respect to residual radioactivity.

This is a slow process. One cannot go from one design rapidly to another design because the developing of these low-fission designs is a tricky business.

Mr. RILEY. Thank you, sir.

CONTRACTING POLICIES

According to the tabulation given to the committee by the Atomic Energy Commission, it seems that most of the contracts for 1957 were awarded by negotiation rather than competitive bidding. Could you tell the committee some reasons for that?

Also, is that policy to be continued?

Mr. FLOBERG. I think the best answer on that can come from Mr. Derry, who has negotiated a substantial number of these.

Mr. DERRY. The contracts you are referring to are generally operating contracts. This is the bulk of the contracting. On the order of 92 to 93 percent of all of the dollars spent by the Commission are for operating plants at Savannah River, Hanford, Oak Ridge, and all of our feed material plants. Also, on our very large construction jobs we have cost-plus-a-fixed-fee overall contracts.

On the other hand, the subcontracts for construction under these large prime contractors are generally awarded by advertising, and the procurement of supplies is done by advertising.

Mr. FLOBERG. I might elaborate just one monent on that. Some of these large contracts to which Mr. Derry referred, like the operation of Hanford or the operation of Oak Ridge or Savannah River, are long term in their prospect. The importance of continuity and experience on the part of the contractor is very great.

Mr. RILEY. According to an analysis of the actions you took last year, some 1,733 activities were advertised, embodying approximately $58 million. The negotiated-competitive actions were 3,892, involving some $114,406,000 and negotiated-noncompetitive, some 10,427 actions, involving $1.639 billion plus. That is a breakdown of the analysis that I have.

Mr. FLOBERG. I would like to point out that a very large percentage of the last group of contracts to which you referred are research contracts, and they are made with a specific unit of talent.

Would you like us to supply a short description of those groups of contracts?

Mr. RILEY. I believe we have a record of it. We wanted to get it in the record.

It is not possible, then, in your opinion, to have competitive contracts on more of these items than you have had in the past?

Mr. DERRY. The prime contractors do have competitive buying, and they undertake competitive purchases. It is the policy of the Commission, wherever possible, to advise and procure by formal advertising means.

Mr. RILEY. Do you think they have competition in most of the contracts they award?

Mr. DERRY. Yes. It is our policy to appraise and audit their activities to make sure of this.

Mr. RILEY. It is our thought that as industry gets more and more of the know-how of this new energy, there ought to be greater competition in the awarding of contracts. Would you agree with that?

Mr. DERRY. Yes, sir. It is the policy of the Commission to make sure that everyone who has the opportunity to compete and furnish supplies and materials does so wherever it is possible.

PROCUREMENT OF RAW MATERIALS

Mr. RABAUT. Do my colleagues wish to ask questions on the opening statement, or shall we continue with the raw-materials section and then have questions on that?

Mr. RILEY. I have one or two general questions.

On this matter of uranium raw materials, the Government, I believe, has a guaranteed price, does it not?

Mr. FLOBERG. Yes, sir.

Mr. RILEY. How does that price compare with the uranium materials you buy from abroad?

Mr. FLOBERG. It varies so much I would like to have Mr. Johnson describe in detail how the price structure works.

Mr. JOHNSON. The basic domestic program back in 1948 established a price on uranium ores. The mill concentrates were at a negotiated price based on the price of the ore and the cost of milling.

With the improvements in the technology of milling which has taken place, our costs have been coming down. Whereas originally the domestic prices were the highest, today they average lower than the prices for foreign materials.

The principal reason for that is the better grade ores in this country. For example, a ton of average domestic uranium ore will result in 5 pounds of uranium oxide in a concentrate. The average of the Canadian ores will produce only about 2 pounds of uranium oxide per ton of ore. In South Africa, the third important source of uranium, the material there is a byproduct from gold operations. The material after extracting the gold contains from a quarter to 1 pound of uranium oxide per ton, averaging about a half a pound. This material would not be an economic source of uranium today by today's standards except for the fact that the gold operations bear the mining costs. Even so it requires a very large operation, a very large plant, to produce the material at a price in the general level that we are now paying.

Our domestic prices, for example, have been gradually reduced and will be reduced further. Today they would average for fiscal 1959 possibly about 70 cents or 80 cents lower than the average of the cost of the foreign materials.

Mr. RILEY. How long do our contracts with these foreign producers extend?

Mr. JOHNSON. Our major commitment for foreign uranium is with Canada. Most of the contracts with Canada will expire on March 31, 1962, with a relatively small quantity which will be delivered in the following year, between March 31, 1962, and March 31, 1963.

Our South African contracts were 10-year contracts, and the first of the individual mill contracts will expire at the end of 1963, and there will be a sharp decline, with the last contracts expiring at the end of 1966.

Our contracts for South African and Canadian material are not with the individual mills but are with the governments, but the prices and the terms are the same as the contracts between those governments and their private producers.

Mr. RILEY. Is it going to be necessary to extend those contracts in order to protect that source and to keep it from going to some other government?

Mr. JOHNSON. I would not think that today we would get into the business of preclusive buying to protect a source of uranium, and I think we have confidence in both Canada and South Africa that the material will not be made available to countries unfriendly to the western countries.

The question of whether any of the contracts are extended, and this applies particularly to Canada where we have an option to extend

the contracts beyond March 31, 1962, will depend upon the requirements of this Government at the time, and the domestic sources available.

Our domestic developments during the last 5 or 6 years have changed the position of this country greatly. Earlier in our program we were considered a have-not nation with respect to uranium, but I believe we can look with assurance to our future resources as being able to take care of most of our requirements, if not all of them.

Mr. RILEY. For a considerable period of time, Mr. Johnson?

Mr. JOHNSON. We can look forward to domestic sources meeting our requirements through 1966 as now projected. There could be an expansion in production. Looking toward the long-range future, 20 or 30 years ahead, the domestic supplies available will depend upon new discoveries.

However, I think the experience and the knowledge we have gained in the past 10 years in developing domestic sources justifies the view that there will be a continued high rate of discovery in this country; that there are many more large productive areas to be found if there is an incentive to carry on the extensive exploration work that is required.

Mr. RILEY. Thank you.

BUDGET ESTIMATES FOR 1959

Mr. EVINS. Mr. Chairman.

Your overall budget for 1959 asks of this committee and Congress how much in funds for both your operating budget and your construction budget?

Mr. FLOBERG. The operating estimate is $2,467,594,000, and the construction budget is $380,367,000. These are obligation figures in both cases; $2.848 billion is the total.

Mr. EVINS. Of this amount, how much did you ask of the Bureau of the Budget?

Mr. MCCARTHY. I do not have the exact figures, and I did indicate we would furnish them for the record. I believe that the request of the Bureau of the Budget was some $200 million over and above the amount shown herein.

Mr. EVINS. What were the items cut out by the Bureau of the Budget?

Mr. MCCARTHY. I was trying to recall the split between the construction and operating side. I do not have the details fully in mind, nor do I have them with me, but I would be glad to supply them for the record.

Mr. EVINS. Was this your original budget that was prepared last fall by the Commission and submitted to the Bureau in which they cut out $200 million?

Mr. MCCARTHY. No, this reduction was in the amendment transmitted this spring after the original budget went forward.

Mr. EVINS. In other words, they cut you $200 million after sputnik. Your original budget was a presputnik budget.

Mr. MCCARTHY. That is correct. There was a reduction of some $200 million in the amendment which went forward to the Bureau of the Budget.

Mr. EVINS. How much was your budget revised following the sputnik incident as approved by the Bureau of the Budget?

Mr. McCarthy. There was an increase of $130 million for operating expenses and I believe it was somewhere around $200 million increase in total that was approved and went forward to the Congress.

Mr. Evins. $130 million operating and how much in construction?

Mr. McCarthy. The approved amendment included $84 million for construction and $130 million for operating expenses.

Mr. Evins. That is $214 million.

How much more did you ask of the Bureau which was not approved?

Mr. McCarthy. This, as I indicated, was some $200 million over and beyond these amounts.

Mr. Evins. In other words, you asked for $314 million?

Mr. McCarthy. It was roughly $400 million. There was no reduction in the budget we transmitted last fall. The reduction was in the amendments we transmitted this spring.

Mr. Evins. In the amendments you transmitted this spring, you asked for a revised budget of about $400 million more?

Mr. McCarthy. That is correct.

Mr. Evins. Of that, the Bureau approved $130 million increase for operating and $84 million for construction?

Mr. McCarthy. That is correct.

Mr. Evins. I get the picture clear for the first time now. With your two budgets, they are a little bit unclear.

Of this $130 million do those figures carry forward in your raw materials and weapons materials and reactor development, broken down all the way through?

Mr. Floberg. Yes, sir, they carry through all the various programs.

PROCUREMENT OF RAW MATERIALS

Mr. Evins. On page 8 you state that our materials program has been stabilized. On page 6 you say after reviewing the western mine situation—

it was decided that a limited expansion of our domestic program could be undertaken to aid the mines.

What brings about that apparent conflict in your statement?

Mr. Floberg. The statement on page 6 is referring to raw materials. That is uranium ore. The statement on page 8 you are referring to has to do with special nuclear materials. These are reactor products and the operation of plants. Is that clear? The statement on page 6 refers to the purchase of uranium ore from miners, or concentrate that is actually the product from the mills. The reference under special nuclear materials is to plutonium and other reactor's products that come from plants which we operate.

Mr. Evins. How are your purchases from western mines comparing to several years ago? Are they accelerated or diminished?

Mr. Johnson. Our purchases from domestic sources have increased greatly. The procurement rate which we now have is designed to meet procurement goals established in accordance with the requirements.

The increased production reflects contracts and commitments made from 18 months to 2 years prior to the delivery date.

Mr. Evins. In other words, there is a greatly accelerated purchasing from our domestic mines at this time.

Mr. JOHNSON. Yes, sir.

Mr. EVINS. Are your stockpile requirements reflected in the requests of the General Services Administration in their overall stockpile program?

Mr. JOHNSON. No. Uranium is not covered by the General Services stockpiling program.

Mr. EVINS. Are any of your other materials besides uranium included in the GSA stockpile program?

Mr. JOHNSON. At one time the Commission undertook some limited buying of beryllium ore, and the General Services stockpile was also purchasing that material. However, we have not purchased beryllium ores for some period of time. All of the material is now coming from commercial channels.

Mr. EVINS. I serve on another committee in which the GSA reports that their stockpile objective has been substantially obtained; that they have practically reached the saturation point. Uranium does not in any way affect the GSA stockpile?

Mr. JOHNSON. The only one product by which we were affected with respect to the GSA stockpile was vanadium. Vanadium is a coproduct in some of the western ores. As a matter of fact, the earlier known deposits of uranium ores in the West all contained commercial quantities of vanadium, and for a period of years the vanadium produced in connection with the uranium operations, that which was in excess of commercial requirements was, delivered to the stockpile.

The stockpile no longer is accepting vanadium, its requirements having been met.

Mr. FLOBERG. Occasionally we have borrowed other materials from the stockpile, conventional materials, and subsequently replaced them or are in the process of replacing them.

BASIC RESEARCH PROGRAM

Mr. EVINS. I notice on page 19 you state the importance of basic research, and so forth, with which we are all concerned and aware, but also the President in his annual budget message to the Congress singled out the National Science Foundation and recommended that its figures for research be doubled. Those figures have substantially been supplied already.

Will you tell us whether or not there is any duplication or overlapping or coordination with the National Science Foundation in its efforts?

Dr. LIBBY. I would like to make a general statement, and I would like to ask Dr. Williams, our Director of Research, to answer it in further detail.

We have a certain field which is our particular field of interest. This consists of things that have to do with the atom. We think this is our particular field.

We support research on the basis of a pretty broad interpretation of that principle. There are, nevertheless, whole fields of science where we have essentially no money. For example, in organic chemistry, which is a very important field of science. We have little money going into that.

On the other hand, in nuclear physics we are the principal supporters. The general idea is for our support to lie with the broad interpretation

in the general field of atomic energy. This is narrower than the whole field of science which the National Science Foundation covers.

We correlate with them very closely, and we work very closely with them.

Perhaps Dr. Williams could add a few remarks to my general statement.

Dr. Williams. I would only say that this coordination we have with the National Science Foundation is very intimate, and I would think that we have little conflict and only the necessary desirable overlapping to cover the different approaches which might seem necessary in the attack on any research problem.

Mr. Evins. You have stated the importance of basic research, and the National Science Foundation is concerned with basic research, and whatever funnels out of it may go to the Atomic Energy or any other agency.

Dr. Libby. Our benefits are not restricted to the AEC. Nevertheless, it does make for better housekeeping if we have this sort of general rule, but it is very broadly interpreted.

Mr. Evins. There is a great deal of money being spent in that field, and there has to be some limit to it somewhere. You testified last year, and I assume the same testimony applies this year, that there is no overlapping or duplication with respect to agricultural products with the Department of Agriculture.

Dr. Libby. That statement I think is still a good one. We have a certain field of interest here in the way of applying isotopes particularly, and radiation, even though on radiation on foods, most of it is being done by the Quartermaster rather than by us. We help him, but he is really carrying the main load.

I think that statement is still true.

COMMUNITY PROGRAM

Mr. Evins. With respect to your community program, in the several years that I have been on this committee, about six, I believe, we have been talking about the sale of the properties in certain of these areas, and we find by your statement here that it seems to be progressing rather slowly.

Can we not have a little more speed in that area?

Mr. Floberg. I would not think it was progressing too slowly. I have been to both these places, and I have been surprised at the relative speed with which things have been progressing. We certainly have an end in sight on the disposal of these communities, and I suppose that the curve of progress may begin to taper here as time goes by.

It is certainly our desire to dispose of this problem as quickly as possible.

Mr. Evins. What percentage of the cost is the Commission recovering?

Mr. Towne. Virtually all of the real estate at Oak Ridge under the provisions of the Atomic Energy Community Act of 1955 will be sold by the end of fiscal year 1959.

The sales at Richland, Wash., will be completed, it is now estimated, about 8 to 12 months later.

These sales are proceeding under the direction of the Housing and Home Finance Agency, which has been given the responsibility by Executive order of the President.

As we testified last year, the depreciated book value of the real estate that is being sold is on the order of $80 million. The estimated proceeds of sale that will accrue to the Government will be on the order of $60 million. The difference between these two figures is in large measure due to the fact that the Community Act provides for certain discounts granted to priority purchasers of the residential property in the communities. The occupants of houses get discounts if they buy, as do project-connected people and other residents. This was a sales incentive feature of the disposal legislation.

To date, about $30 million has been taken in the way of receipts.

Mr. EVINS. I notice you seem to point out the loss of revenue to the Commission because of these disposals, and for that reason I rather gained the impression you were not too concerned about proceeding more rapidly.

Mr. TOWNE. We are directed to proceed as rapidly as we can, so that the program is moving as rapidly as time and staff will permit.

Mr. EVINS. Mr. Commissioner, you are supplying for the committee the proposed breakdown of the money which the Bureau of the Budget is now recommending?

Mr. FLOBERG. Yes, sir.

GAS-COOLED REACTOR

Mr. BOLAND. There is an item in here which you mention in your statement with respect to $51 million for the construction of the gas-cooled reactor.

Mr. FLOBERG. This is a new project, a new request.

Mr. BOLAND. Was any money appropriated in 1958 for this gas-cooled reactor program?

Mr. FLOBERG. There was $3 million appropriated for a study program for it.

Mr. BOLAND. There was no appropriation by the Congress for the construction of this type of reactor?

Mr. FLOBERG. Not for the construction of the reactor.

Mr. BOLAND. There was, as I recall the attitude of the authorizing committee, the Joint Committee and the Appropriations Committee, some concern over the fact that the AEC had not moved into this field as rapidly as the Congress would want it to do.

Mr. FLOBERG. I think that is a fair interpretation, and I think I can answer your question a little more fully.

Last year the Congress appropriated the money for this design study and instructed the Commission to return that design study to the Joint Committee by the 1st of April of 1958.

The design study was conducted and the report was submitted to the Joint Committee by April 1. The Commission, of course, studied it at the same time the Joint Committee was studying it. We, the Commission, came to the conclusion that it was desirable to prove out the technical value of gas cooling on a fairly large-scale basis.

This will be a reactor of some 40,000 kilowatts, plus or minus.

Mr. BOLAND. Is this the one to be built at Arco, Idaho?

Mr. FLOBERG. I do not believe the site has been selected, but that is a possibility.

Mr. BOLAND. This is to be built by the Government?

Mr. FLOBERG. The provisions of the authorization act—this bill has not been passed and is still in the Congress—provide that the Commission shall, within a reasonable time, solicit proposals for the private construction of this reactor.

If, after a specified period of time which the bill provides, there has been no demonstration of private interest, then the Commission shall undertake the construction. However, if there is a demonstration of interest, there is an additional specified time in which the Commission can negotiate a contract for the construction of this reactor.

Mr. BOLAND. In the time I have been sitting on this committee, I have the observation and the opinion that the Commission itself looked with skepticism upon this particular reactor, the gas-cooled reactor. It did not seem that the Commission was too interested in it, and sort of played down the value of the gas-cooled reactor, despite what success other nations may have had with it, and I just wondered what our progress has been in it since the Congress has expressed an interest in the Commission going into it a little bit more.

Mr. FLOBERG. I do not believe it is correct to say that the Commission has not been interested in gas-cooled reactors. I believe it would be more accurate to say the Commission is not interested in a natural uranium reactor cooled by gas.

The reactor for which you see the $51 million request would not be a natural uranium reactor. It would be a slightly enriched uranium reactor, gas cooled.

Mr. BOLAND. This is the difference between the English type and the type you are mentioning now, the enriched uranium?

Mr. FLOBERG. That is one of the differences. I believe it is universally agreed now, even by our British friends, that an enriched reactor has considerably more economic promise.

Mr. BOLAND. Do you have applications from municipalities or private contractors for the construction of gas-cooled reactors?

Mr. FLOBERG. There has been no application submitted to the Commission, to my knowledge.

Mr. BOLAND. Are there any pending with respect to municipalities or cooperatives?

Mr. DAVIS. There is a gas-cooled heavy water reactor which has been proposed.

WEAPONS TESTING

Mr. BOLAND. A question was raised in the testimony with respect to additional testing. I think we can continue to follow it out with a few questions.

General Starbird indicated funds would be spent in fiscal 1959 for additional test purposes, and you detailed what they would be. Apparently the weapons are going to be more sophisticated, and the constant change on the carriers themselves necessitate the building of various types of weapons.

All of us are aware, as of course you are, and I am sure you more than anyone else, that there is considerable opposition to the testing, but you do not think that the Russians have ceased all tests in this field, do you?

General STARBIRD. I can only give this as a personal opinion. I do not know of anything the Russians have done so far which was not to their own advantage. I believe if it is to their advantage to go back

to testing, they would go back to testing. And if I were a Russian and had his psychology, I would be preparing for testing while the world is calling for us to stop.

Mr. BOLAND. There is a likelihood that they are preparing for tests grounded on the same reasons you gave here, that their carriers require different types of weapons, different sizes, with the result that you do not know how feasible or good they are going to be unless a test is made.

General STARBIRD. This is one side of it, but with their psychology of conducting world business as contrasted with ours, we are in a position where we say we are never going to move, take the offensive as we are a peace-loving nation, and we are only going to try to counter if an attack comes against us, whether it be here or somewhere else.

The man fighting on the offensive, particularly when he can choose his time and he has central lines and can move secretly, is able quite often to use weapons which are not as sophisticated as the poor defensive power which must be able to move at any time on any front.

Mr. BOLAND. I think the Commission's position on it is good.

INTERNATIONAL CONFERENCE ON PEACEFUL USES

How much money is in this budget for the international conference on the peaceful uses of atomic energy at Geneva in 1958?

Mr. FLOBERG. In the 2 years, last year and this year, the principal part being in this budget, is about $4.6 million.

Mr. BOLAND. I know the Commission pointed with pride to the effects of the last conference and justifiably so. My hope is that the exhibits we have there will be as good or better than some of our competitors in the field. It always seems to us that we wind up in second place at most of our exhibits all around the world. I only hope, and I presume that you are going to put your best foot forward, that our exhibits will be those which will be looked at with awe by those who inspect them there and also that the people who see them will appreciate the advances we have made in the fields of peaceful uses of atomic energy.

Mr. FLOBERG. We have every intention of having a first-class exhibit.

PERSONNEL TURNOVER AT NEW LOCATION

Mr. BOLAND. I have one more question with respect to personnel problems with respect to the new location. Can someone tell us about that?

Mr. FLOBERG. In what particular respect?

Mr. BOLAND. What is the spirit of the personnel at the Germantown location? Are you having difficulty keeping personnel?

Mr. FLOBERG. I would like to have Mr. Smith comment on the turnover rate since we have moved to Germantown.

Mr. SMITH. The turnover has been primarily at the clerical level. I think we have improved our clerical staff. The turnover was quite high in the first 2 or 3 months. In January or February, it was probably 2 or 3 times higher than normal. It is back to about normal now and we have made up this difference in our recruiting. We have been recruiting throughout the year and we have been getting older and more experienced personnel. Whereas, in Washington the bulk

of our recruiting of clerical personnel was at the end of the high-school year, and we relied very heavily upon new graduates, we are now getting more experienced people, and I think they will remain with us longer.

Mr. FLOBERG. It is our anticipation that our rate of turnover will be less than in Washington.

Mr. BOLAND. I would think so after it has leveled off. I presume that the new facilities out there make for a better position for the Commission itself to move ahead with its problems. You have everything under one roof and the facilities are good. So I presume most people are happy there.

Mr. FLOBERG. There are some personal differences of opinion, but I think it is a wonderful solution to the problem.

Mr. JENSEN. Mr. Floberg, this is the first time you have appeared before the committee. I am glad to see you here. Mr. Vance and Dr. Libby have appeared before the committee in years past and have given us the advantage of their good knowledge.

Mr. FLOBERG. Mr. Graham would have been here today but he is en route to the test area in the Pacific.

Mr. JENSEN. The committee as a whole has great respect for not only the Commissioners but also for the fine staff and the heads of each division in the Commission. I see a number of faces here today that are familiar.

We on this side of the table, of course, are not nuclear experts by any stretch of the imagination, so we must depend entirely or to a very great degree on the testimony that is given by the Commissioners and the staff.

BIOGRAPHY OF COMMISSIONER FLOBERG

Now, Mr. Floberg, it is customary for the committee to ask of a person who assumes a great, responsible position in Government to give the committee a short biography of himself, his experience, and so forth. Therefore, would you give the committee right now a short synopsis of your life.

Mr. FLOBERG. Yes; I can do that.

I am a Chicagoan by birth. I went to grammar school, high school, and college in Chicago. I went away to law school. I finished law school in 1939, returned to Chicago and practiced law there with Kirkland, Fleming, Green, Martin & Ellis, which is the largest law firm west of the Hudson River, as far as I know. We have about 75 lawyers in Chicago and about a dozen down here in Washington. I practiced with them until November of 1941 when I went into the Navy. I was in the Navy throughout World War II, returned to the law firm in 1946, was with them until December of 1949.

On December 5 of 1949, I was sworn in as Assistant Secretary of the Navy for Air, and I stayed in that billet until the 23d of July of 1953. When I left there, I went back to the law firm but in the Washington office and stayed there until September 30 of 1957, sworn into this present job on October 1 of 1957.

If there is any expansion on any part of that brief statement, I would be glad to give it.

Mr. JENSEN. I thank you.

I was quite impressed with the answers that you have given the committee up to this time. It is an indication at least that you know your business.

RESPONSIBILITIES OF AEC COMMISSIONERS

A great responsibility, of course, rests on your shoulders. You can expect to be criticized, as were former Commissioners. In this country of ours, we reserve the right and would fight to the bitter end to see that people have that right with respect to public servants.

There were many times that I felt that the criticism that was directed to Admiral Strauss was completely unjustified. Admiral Strauss, in my opinion, has been a great public servant. He has been devoted to his job. I am sure he will go down in history as having done great things for America in this atomic energy field. If Admiral Strauss were here, I would congratulate him and say that I was sorry to see him retire. I hope and I believe that you will carry on in a manner that will prove to be good for America and for the world. I am sure you recognize and realize the great responsibilities that rest on your shoulders. I can assure you as one member of the committee, and I am sure I speak for every member, that we will give you the support you deserve, reserving the right to criticize when we feel criticism is justified and beneficial to our country and the people of the world.

PLUTONIUM BUY-BACK PROGRAM

Mr. JENSEN. Admiral Strauss was accused of favoring legislation for "buy-back" of plutonium from foreign reactors as an "effort to bail out Walker Sisler and his Detroit-Edison plant." What is the Commission's opinion on this plutonium buy-back program?

Mr. FLOBERG. I think I know the foundation of your question.

Mr. JENSEN. Would you furnish that information for the record, please.

(The information referred to follows:)

PLUTONIUM BUY-BACK PROGRAM

For all plutonium metal delivered to the Commission by licensed domestic producers prior to July 1, 1962, the Commission will pay on an established schedule of fair prices depending on the plutonium 240 content. Under this schedule the fair price for plutonium metal containing no plutonium 240 is $45 per gram. The fair price decreases linearly to $30 per gram for plutonium metal containing 8.6 percent or more of plutonium 240. For all plutonium metal delivered to the Commission by licensed domestic producers during fiscal year 1963, the Commission has established a fair price of $30 per gram, regardless of plutoniun 240 content. These fair prices have been established in accordance with section 56 of the Atomic Energy Act of 1954 as amended, which states that in determining the fair price "the Commission shall take into consideration the value of the special nuclear material for its intended use by the United States and may give such weight to the actual cost of producing that material as the Commission finds to be equitable." As required by law, the fair price applies to all licensed producers of the same material. The price has not been determined to favor any particular type of reactor or any individual reactor operator.

PROGRESS OF RUSSIAN PROGRAM

Mr. JENSEN. A number of critics have stated or inferred that the AEC program is lagging behind the British and the Russians. Would you care to make an answer to that?

Mr. FLOBERG. I do not think that that is a fair criticism of our program. I believe we are ahead of both of them. First of all, as far as the Soviet program is concerned, not very many people know much about their program. They have a small power-producing

station not far from Moscow which has been shown to foreigners. I believe it is rated at 5,000 kilowatts of capacity, and I believe they have stated that it never reached capacity. It is working at something less that that. There has been talk about large-sized Soviet powerplants at various points in the Soviet Union and, conceivably, they do exist, but certainly no foreigner has ever seen them.

The Russians have exhibited models, I believe, at Geneva and elsewhere of 200,000-kilowatt powerplants and larger ones, but these are only models that would fit on a few feet of this table. That may well be as close as they are to having those particular installations. On the other hand, they may have a substantial program of which we do not know the details.

BRITISH PROGRAM

As far as the British program is concerned, comparisons are difficult because there are differences in our objectives.

One thing is perfectly clear and that is the multiple approach the United States has had to nuclear civilian power has given us a foundation of technical information and technical backup that no other country can rival.

The British have the so-called Calder Hall plants that are making power. These were originally conceived of, if I am correct, as production plants actually, and the power is more or less incidental to their existence. They are making substantial quantities, however, but I would call them primitive compared to the concepts that we have in mind.

We all know that no country has got very far in this business, including ourselves. We have only one large-scale power-producing reactor in this country, and that is the one at Shippingport, Pa., and I would say it is probably the only large-scale one in the world.

Within the next 3 or 4 years, there are going to be lots of developments in lots of places, and I feel perfectly confident, and I think the Commission does, that we will not have to take any backtalk from anybody regarding the status of our civilian power programs.

Mr. JENSEN. Thank you.

I might say I think you know that Mr. Rabaut and I visited and inspected the power reactor plants in England and Scotland last fall. They were quite impressive. We visited the fast-breeder plant which was then about 85 percent complete in northern Scotland. That plant has not come into production yet, as I understand it.

Mr. FLOBERG. I do not believe it is in operation yet, Mr. Jensen.

Mr. JENSEN. We were also at Calder Hall and we saw the gas-cooled reactor plant which they have there in operation. They have had an unfortunate incident there which I hope they can solve in due time. Of course, they put most of their emphasis on natural uranium gas-cooled reactors and without a doubt they are farther along than we are on that specific concept.

We were very pleased with the manner in which they accepted us. We had their Atomic Energy Commission members with us.

We had two hearings, I believe, with the Atomic Energy Commission of Britain and with the Minister of Power who explained to us the use of atomic energy which is being put in their power grid. Of course, they admitted that it was expensive power.

ATOMS FOR PEACE PROGRAM

What is the present status of the atoms for peace program and what are your requests for this program in fiscal year 1959?

Mr. FLOBERG. I think the atoms for peace program is progressing quite well. Whether anything ever progresses satisfactorily is an arguable question because you can always make better progress than you are making.

We have had a great many bilateral agreements—I believe the figure is 41 with foreign countries, and we have undertaken assistance to foreign countries on research reactors in 16 cases.

We have furnished quite a bit of isotope information and some isotope schools, in effect, to foreign countries. We have conducted seminars in foreign countries on various nuclear problems. We participated in an Inter-American Conference on Nuclear Energy a couple of years ago and intend to do so again in 1959.

There has been quite a bit of activity under the atoms for peace program. This is not something you can ever be satisfied with because you are always looking for more results to show for your efforts, but we have this very high up in our consciousness and we intend to drive hard on it.

I spoke about the Euratom program this morning, and I think it is a pretty good demonstration of what can be achieved.

Mr. JENSEN. Some time ago, a prominent critic asked "What has happened to atoms for peace? I don't hear a word about it any more."

Has the program been criticized lately?

Mr. FLOBERG. I think we criticize ourselves from time to time simply because we are trying to drive harder to get more tangible results for it.

ENGLISH ATOMIC POWER PROGRAM

Mr. RABAUT. Insofar as England and Scotland are concerned the big surprise to me was how they are putting the gas reactor into their electric grid. All along we have been led to believe or felt we were led to believe that it did not amount to very much and that it was very expensive. I do not know what all of the objections to it were, but I certainly was one of the most surprised people when they showed us their program to build a number of plants.

They told us that the figures on the last one that they put up are in comparison with production of any other electrical outfit today. Yes, in view of the fact that coal is about $20 a ton over there, that would be it.

Now, when they are using natural uranium reactors and putting them into their own electrical grid system, I fail to see that they are not making terrific forward steps in the use of atomic power.

Mr. FLOBERG. They are making progress. There is no doubt about that, and we are glad to see them make the progress.

On the other hand, we would never do in this country what they have done there because we have quite a different situation.

Mr. RABAUT. They have an outlet, and when we sat with their authority we learned that they feel that a great many countries will not be looking for spiked or enriched uranium. They feel that they will be pleased to use the type of uranium that they can find among their own resources and put that into this type of a plant.

After all, you must remember that their labor over there is quite cheap and many nations have no power of this type or any other type to speak of. So they are going to have a market for their type of powerplant. Whereas, with us, we will have to supply enriched uranium for what we plan to do. I would like to get the answer on that.

Mr. FLOBERG. I would like to answer that question. In the first place, there is universal technical agreement that enriched uranium reactors are likely to be more economical.

The next point is your assumption or statement that there might be countries in the world who, even though it might be more economical, will for their own reasons choose not to use enriched uranium but will rely on natural uranium. The Commission is not unaware of this problem. This is not a technical problem. It is a problem beyond the control of the technicians.

We have in this budget, in the reactor development part of it, a provision for a study for a heavy water-cooled reactor which would be operable on either natural or enriched fuel. The concept of this is that if you use enriched fuel you will get the economic advantages of enrichment with cheaper power as a result.

On the other hand, if enriched fuel is not available for whatever reason, whether it be the customer's own choice or some other reason, the reactor will still be operable on natural uranium.

I analogize this to your automobile which may, if it is a certain make, be the kind that is built to operate on high-test gasoline, but if you are out in the country somewhere and there is a place that does not have high test, you can use regular and get to the next station. You may not get the mileage or pickup or top speed or anything else that that automobile was designed to give you, but it is going to run.

The reactor that we have in mind that we will report to the Joint Committee next spring, similar to the study that we reported to them this spring in connection with the gas-cooled reactor, will be this alternate fueled reactor, and it is meant to be a real test of natural uranium, not a superficial test of it, a real test of natural uranium as a fuel in this type of reactor, but we are perfectly well convinced that the heavy water lends itself better than the graphite-moderated gas-cooled reactor. We are going to run this one down and run it right straight into the ground.

Mr. RABAUT. That is fine. I am not disagreeing with you at all. I am saying this about the British: They are actually using this reactor and tying it into their grid system and depending upon it and are making further statements as to its reduced cost as they build them bigger, which, of course, was very surprising to me.

COST OF ATOMIC POWER

Mr. JENSEN. May I state my reaction to the testimony that was given by the Atomic Energy Commission of Britain and by their Minister of Power on the day that he appeared before the Commission when we were both there.

Here is what I gathered from that testimony:

Electric power in England is much more costly than our electric energy is here in the United States for the reason that coal is higher

over there than it is here, which is the fuel used to produce power in Britain exclusively up until the Calder Hall atomic energy power was put into the grid system.

You will remember, Mr. Chairman, I asked the Atomic Energy Commission what they were paying for the atomic energy that went into the grid system from Calder Hall, and they said 8 mills a kilowatt-hour. Then I asked the Minister of Power if 8 mills per kilowatt-hour was the cost of the atomic-energy power or if the Government was making a profit or loss on the 8 mills per kilowatt-hour, he said, "We have a loss. It costs us more, considerably more, than 8 mills a kilowatt-hour. We charge off a certain amount for the plutonium, but, if we were to charge the cost of the power, if we were to charge the actual cost of atomic-energy power, it would be prohibitive as far as price is concerned, Mr. Chairman, and so it is a subsidized program, pure and simple."

Now, in this country, we have, for instance, the Bonneville power rates of 2 mills or, perhaps, a little more, per kilowatt-hour. We can produce conventional steam-electric power with, say, natural gas, for less than 4 mills per kilowatt-hour. We can do the same thing with coal in certain forms now. So, we have an entirely different situation as far as the production of electric power is concerned than England has.

That was my reaction to the testimony that was given, and I am very sure that the facts will bear me out in that statement.

Mr. RABAUT. We are talking about two different things. The first installation of these gas reactors over there was at a high figure. When they get up to these plants of 250 kilowatts, they figure it runs along with their normal costs with coal. We cannot compare it to ourselves. They claim that the new 250-kilowatt stations would match their present cost of production by coal today, and that is the reason they are putting it into the grid. There is no reason for them to put it into the grid just to try it if they are losing money on it. They are planning a real program.

The said later on they are going to see what they can do about enriching their uranium, but to what degree they intended to enrich it, they had not decided. I have to admit it was a big surprise to us. I expected to find something that was costing them so much money they would never be able to make a go of it, so I was quite surprised, as anyone would be, from the testimony that we had from time to time. That is the way it struck me, and I am just making a confession of it. It is true what you said about the cost. The cost was on the original ones, which were more or less trial balloons.

Mr. JENSEN. They can afford, of course, to subsidize atomic power because of the act that they have a dearth of thermal power, and they need more capacity. So, up to this time, at least, they are willing to pay more for power produced by the atomic method than they hope will be the case in the future. I agree with Mr. Rabaut, to that degree.

PROBLEMS ASSOCIATED WITH REACTORS

What are some of the major metallurgical and chemical problems which remain to be solved in connection with the development of economic electric energy from each major atomic-power concept now under active consideration, and what is the hope of finding the answer to these problems?

Mr. FLOBERG. That is a jawbreaker.
Mr. JENSEN. Supply it for the record.
(The information referred to follows:)

PROBLEMS ASSOCIATED WITH REACTORS

There are a variety of technical problems associated with each reactor type. In general, the more ultimate promise offered by a reactor system, the more difficult the problems seem to be and the longer the time required for development. Sufficient technology has been developed to make possible reasonable cost estimates on only three reactor types. These types are the pressurized-water reactor, boiling-water reactor, and organic-moderator reactor. It is expected that these types, and, possibly, also the gas-cooled reactor, will be able to compete by 1965 with fossil-fuel plants in certain high-cost areas, such as Europe, New England, and the west coast. More advanced types of reactors may be required to compete in low-cost fossil-fuel areas. The various reactor types are constantly under evaluation to determine their present status, direction, and ultimate promise. It is not yet possible to make a selection of the most logical and economic types, as this depends on the results of extensive development work and reactor experience still underway.

The major problems are in fields of materials—developing materials which maintain strength at high temperature, resist radiation damage, and are chemically compatible with the reactor environment. One basic problem is to develop reactors which operate at sufficiently high temperatures (1,000°–1,100° F.) to permit the use of conventional turbine equipment. This problem is being attacked by using high-temperature, low-pressure coolants in reactors, such as liquid metals and gases, and by developing nuclear superheat for the water systems.

PROPOSED BRITISH PROGRAM

Mr. RABAUT. Before we go past the subject, suppose you supply for the record what the proposed British program is for the next 10 years, the number of plants—you people are all working together—the number of plants proposed for the next 10 years and their capacity and their estimated cost.

Mr. FLOBERG. We will, sir, to the extent that we have that information.

Mr. BUDGE. Would you mind adding to that the estimated cost of the production of electricity?

Mr. FLOBERG. We will be glad to furnish that.

(The following information was subsequently supplied:)

PROPOSED BRITISH PROGRAM

We understand the United Kingdom program to consist of the construction of 5,000 to 6,000 megawatts of nuclear electrical capacity by 1966. The present program contains only half as many plants as the original program, but, since the programed output per plant has been approximately doubled, the total in kilowatts remains the same. The planned program is for the construction of 12 stations, consisting of 2 or more reactors each.

This program was originally scheduled to be completed by 1965. The revised program, therefore, represents a year's slippage.

These plants are to be graphite moderated, CO_2 cooled, using natural uranium. Capital costs are estimated at £130 per kilowatt and fuel costs at £21,000 per ton.

Mr. Christopher Hinton, Chairman of the Central Electric Board and former industrial atom chief, recently stated that "nuclear power is not economical and that it will become competitive with other fuels only when and if the capital cost of power stations is reduced drastically and more efficient fuel elements are developed."

The 30-megawatt-electric advanced gas reactor (AGR) represents the next major technical step in the United Kingdom. The AGR, scheduled for completion in 1961, will use UO_2 fuel clad with beryllium or stainless steel. It is expected that the moderator will have a protective coating for protection against CO_2. Maximum design gas temperature is 575° C. (1,067° F.). The British predict a

power cost of 6 mills per kilowatt-hour for this reactor under the British accounting system, when it is scaled up to present conventional powerplant size.

RATE OF PROGRESS ON ATOMIC ELECTRIC POWER

Mr. JENSEN. I would like to have an expression of opinion as to whether or not the Commission feels in the program covered by the AEC budget request premature emphasis is not being placed on the construction of large-scale atomic-power reactors in advance of the necessary solving of many of the chemical, metallurgical, or other difficult problems involved in a number of the presently planned concepts of atomic-power reactors.

I have a feeling that you might be going too fast in asking for money for the construction of these plants before you have had sufficient research and knowledge as to just what kind of atomic reactors are the most logical and the most economical.

Mr. FLOBERG. There is nothing in this budget, in our opinion, that is premature, and, specifically, with regard to the reactor program, that is in this budget. I do not think you will find any voice anywhere in the Commission or in the industry, for that matter, that would say we are moving too rapidly in the construction of the reactors contemplated by this budget. I am pretty sure I am right on that, Mr. Jensen.

Dr. LIBBY. May I interject that we have materials problems that are mammoth in the sense of reprocessing of fuel elements and in the production of fuel elements cheaply, but the solution to the bulk of the problems require a market for the fuel elements; that is, you have to have reactors into which to put them before you can learn to make the fuel elements cheaply in mass-production techniques.

One of the difficulties on the chemical processing is that we have not had fuel elements that have been burned up in sufficient quantity for them to practice on. We anticipate that, after we get some reactors putting out used-up cores and after we have done a few of these ourselves, and we guaranteed to do, then the industry will be coming in more. So, what I wanted to add to Mr. Floberg's statement is that there are research and development problems which do require plants in being in order to get them done.

The manufacture of fuel elements costs more per pound than the manufacture of Swiss watches. It is a fantastically expensive operation, and the production and the isolation of the unburned special nuclear material fission products of plutonium from the burned-up cores is something we are going to have to do at a Government-guaranteed price. We think we can do it for our established price, but we think industry will, eventually, come in and do it at a lower price and, therefore, reduce the cost of atomic power.

These two developments require some plants in being so that these things can be carried forth.

The Euratom program will do this for us. It will be supplying fuel elements for them, giving our industry a chance to make elements more cheaply. Right now, they are all individually handmade at great cost, and it is just a small point but it is not an unimportant point.

Mr. JENSEN. If these atomic energy reactors were producing raw materials, I would not question the request which you have in this budget, but most of these funds which you are requesting are for

atomic power reactors to produce electric energy. In my opinion, such funds are not completely justified due to the fact that we can produce in America thermal electric power so cheaply I do not see how we can be completely justified in spending so much money for these larger plants.

I can understand your pilot plants. You must have pilot plants of a small capacity to learn just exactly what that type of reactor can do and will do. However, I feel that as time goes along, you are learning more day by day as to the value of the different methods that are used in the production of atomic electric power.

That is my reason for feeling that possibly we are going too fast on the construction and possibly not putting sufficient emphasis on research.

Mr. FLOBERG. I think you would find that the Commission agreed with your general statement of philosophy, but we would not agree that it applied to the program that we are presenting in this budget.

I know that there is nothing in mind for construction which has tremendous unknowns in it. There are a great many unknowns in the sense of metallurgical and chemical and other problems, but we do not go into the construction of anything until we know it is going to work.

I believe that we can demonstrate to you that everything that is contemplated for construction in this budget has a solid technical foundation for the construction.

I might add that there are no very large-scale plants in this program. This is not a big-plant program at all. These are all small intermediate-sized construction projects.

Mr. JENSEN. What is the capacity of the plants you are asking for?

Mr. FLOBERG. This is the 40,000-kilowatt plant which we do not call large. That is really a small-scale plant. We do not think a smaller one would really test out the gas-cooled concept.

Mr. BUDGE. Is not the Calder Hall the gas-cooled concept? In light of the Commission's testimony last year, why do we have to prove that as a concept?

Mr. FLOBERG. We are going to try to get experience with a gas-cooled uranium reactor, and we are going to cultivate a body of gas-cooled experience in this country which we do not now have, and this is a potentially competitive area.

Mr. BUDGE. Did not the Commission say we could get all of the information we wanted from the British? That is my recollection of the Commission's testimony last year.

Mr. FLOBERG. I do not want to disclaim anything said last year. I would like to ask Mr. Davis to comment on that question.

GAS-COOLED, ENRICHED URANIUM REACTOR

Mr. DAVIS. With respect to the reactor project that we are proposing here, this will differ in two significant ways.

First of all, it will use enriched fuel. The principal reason for using enriched fuel is to be able to use uranium oxide rather than uranium metals as fuel materials. This calls for the development of the type of fuel material that will go in. It is not just a question of using the same material in a different enrichment but using the enriched material in a different form.

The second major difference is we would hope, in the reactor we are contemplating, to go to very high temperatures and, therefore, higher thermal efficiencies than the British do. We will probably end up by using a different gas because of operating the reactors at the higher temperatures.

Mr. BUDGE. The conclusion would be then that you do not anticipate building the type of reactor that was discussed last year and generally referred to as Calder Hall and which Mr. Floberg has referred to as being primitive.

Mr. DAVIS. We would not expect to build such a reactor. It is gas-cooled and graphite moderated. These things are all similar. The reactor itself will be mechanically, and in terms of the materials used, quite dissimilar and we think very much advanced over the British reactors that are built today.

Mr. BUDGE. You said quite dissimilar?

Mr. DAVIS. Yes, quite dissimilar.

Mr. JENSEN. There seems to be no justification for the gas-cooled, slightly enriched natural uranium reactor proposed by the Commission.

Just what additional knowledge is expected from the Commission concept over that to be achieved by the Florida project?

Mr. FLOBERG. There are quite a few, but to be sure they are stated with technical precision and accuracy, I would again ask Mr. Davis to answer your question.

Mr. DAVIS. I think the biggest difference is that the gas-cooled reactor the Commission is proposing to use has graphite as the moderator. The reactor proposed by the East Central Nuclear Group would use a heavy water moderator. This leads to substantial differences in the design and the materials to be used.

For example, developing zirconium tubes whereas in the gas-cooled there are holes in the graphite. There are a large number of significant differences, and the thing you would hope to achieve with the heavy water is a greater neutron economy which would make it possible to operate at a somewhat lower degree of enrichment than the slightly enriched graphite moderator. They are both gas-cooled, but the big difference is that one will have essentially a tank of heavy water which will be slowing down the neutrons.

In the other case, the core of the reactor will consist of a large number of graphite blocks, somewhat similar to the Hanford reactors but with gas rather than water cooling. These are quite substantial differences.

COST OF PRODUCING ELECTRIC POWER

Mr. JENSEN. What is the cost of producing electric power at the Shippingport atomic-energy plant? Do you have those figures?

Mr. FLOBERG. We have them, but it depends a lot on your bookkeeping system. However, we will supply that information for the record.

Mr. JENSEN. I wondered if you had any idea at all as to the cost.

Mr. FLOBERG. We had estimates but the plant has only recently gone into production this year and we are developing experience figures now, and we would be glad to furnish them to the committee as soon as we have them available.

Mr. JENSEN. I think the committee would be interested and I think the country would be interested in knowing what we can

expect will be the rates that will be necessary to charge for atomic-energy power in the near future.

Mr. FLOBERG. The Shippingport plant was not constructed to produce economic power. It was to get experience in the construction-and-operation business.

Mr. JENSEN. I understand that, but it is the largest atomic-energy-reactor plant in operation today, and I wondered if you had gained any knowledge yet from that plant as to the cost of power.

We have heard statements up to as high as 50 mills a kilowatt-hour.

Mr. FLOBERG. I do not think that is going to be very far off.

Mr. Davis, can you comment on that?

Mr. DAVIS. There are, of course, two principal things that will determine the cost of the power. One of them is the capacity that is actually achieved for the plant designed for 60,000 kilowatts on the first core. The plant is actually designed overall so that it could produce as much as 100,000 kilowatts. If you go from 60,000 kilowatts which is as high as it has gone yet to 100,000 kilowatts, it will cut the cost quite appreciably.

Secondly, there is the cost of the fuel materials. There have been estimates based on the 60,000 kilowatts and the design of the first fuel element which are of the order of 60 mills per kilowatt-hour. However, if the plant, as is quite likely, is able to get twice the life out of the fuel and get 100 megawatts instead of 60, it will cut the costs about in half, so we will not even know what the costs are for the first core until we have actually run the plant and find out about the core life and have experimented with it to find out what its capacity is. We can give you an outside figure of the 60 mills and we hope the cost will turn out to be very substantially less than that.

Mr. JENSEN. Sixty mills would be seventeen times more than it would be to produce thermal power with coal or gas at the time, so we have a long way to go.

Mr. FLOBERG. It depends on your geography. In New England where it is 10 mills, it is not quite as much out of line, but no one is going to pretend that the Shippingport plant is an economic investigation. It is an experimental investigation.

BENEFITS FROM USE OF ATOM

Mr. JENSEN. Dr. Libby, I believe you have expressed the opinion that by the utilization of the atom in industry, medicine, agriculture, and so forth, the American people were realizing an annual benefit of half a billion dollars on their investment of some $15 billion in the atomic program. I believed you estimated this benefit would reach $5 billion annually in the next 5 years. Am I right in my recollections, and what is your present estimate of the value or benefits being achieved in these fields?

Dr. LIBBY. We are now close to $1 billion at the present time. By this I mean $1 billion annual savings in industrial manufacturing; this, excepting agriculture and medical benefits, just takes industrial savings and manufacturing operations.

My estimate is that we are very close to $1 billion right now. It is difficult to develop the proof for these figures because we have to put people in the field to get the confidential data from the firms.

But this is what we have done in the past though the estimates aren't up to date.

The National Industrial Conference Board is now in the process of making a study for us under contract so that we will have these figures, but this thing is moving so rapidly that I think a reasonable extrapolation of the last firm figures we have would justify my estimate of $1 billion per year.

We have just scratched the surface. For example, there is a potential application to be made in the control of the wastage of machine tools which I would like to cite as evidence of how rich this field is. The machine-tool business runs into something like $20 billion a year, I am told.

Mr. JENSEN. $20 billion?

Dr. LIBBY. $20 billion is the number I have been given. These numbers come from a study by Mr. Merchant in Cleveland who has been developing this and the estimates that I am quoting to you are his estimates, as I remember them, but it does illustrate the kind of saving which is to be made which has not yet been made.

We have learned by the use of radioactive iron, or materials that contain principally iron but which have impurities, which can be activated by placing it in a reactor where the impurities are activated so that we can measure the rate of wear of the machine tool by observing the radioactivity that appears in the oil which is used to wash the cutting inner face. So, whereas normally in order to tell whether the setting of the machine tool was going to unduly wear away the tool, it would take hours or longer of operation, to obtain a significant reading, in a matter of a few minutes, with this device, by just reading the Geiger counter on the oil filter, you can readjust the setting so as to save the wearing of the tool.

Mr. Merchant estimates conservatively, I think, in view of other experience that this application will save 5 percent of the total annual bill for machine tools. It is a very sizable piece of money.

There are dozens of these applications which you can make. In my shop, we play a little parlor game—who can invent the most isotope uses in a few minutes? And you can do it. You can sit down in 15 minutes and invent half a dozen different new uses for isotopes. All you have to do is to practice.

Our main problem in this isotope development is to arrange courses to get the techniques around to the engineers and people in industry so they can all know them and know about the isotopes. Most of us who were educated before the time that isotopes were really in being, so to speak, and the people in industry today do not have a firsthand acquaintance with isotopes. Therefore, we are planning to give adult education courses, for industry people so that an insight into this marvelous new field of isotope development will be available to everyone.

I think my figure of $5 billion annual savings by 1962 is conservative, and I think isotopes alone will more than repay the people for the entire expenditures made by the Atomic Energy Commission without counting atomic power or our weapons stockpile or our capital investment as assets. I really believe that the money spent by the AEC has been the best invested of any in the history of our country and isotope benefits are a principal reason for this belief.

Mr. JENSEN. Thank you, that is all I have today, Mr. Chairman.

PRODUCTION OF RAW MATERIALS

Mr. TABER. I notice that you say in your statement that you expect the production of raw materials to level off after an increase of perhaps 300 percent in the first couple of years. Why are you levelling off and why is it that you would not be increasing your stocks? Is it because you have a stockpile built up or do you have a rate which you would expect to maintain?

Mr. FLOBERG. In terms of raw materials, we are at an acceptable rate, Mr. Taber, because we are running our raw materials at the rate that the diffusion plants, for example, can accommodate them, and we are running the diffusion plants at a high rate but also at one adequate to absorb the demands for the products of the diffusion plants.

PROGRESS IN ATOMIC ELECTRIC POWER IN CANADA

Mr. TABER. What sort of progress is being made in Canada on the development of atomic power?

Mr. FLOBERG. They have a very modest program, but I would like to have Mr. Davis comment on it in detail.

Mr. TABER. There was an article in the New York Herald Tribune yesterday—I have forgotten the page number—indicating that they claim that they were producing power as cheaply as it can be produced with coal. I do not know whether you noticed anything of that kind or not.

Mr. DAVIS. No, Mr. Taber; they have been devoting their attention entirely to the heavy water moderated and gas-cooled reactors. They have no reactors which make power.

About 2 years ago, they started construction of a small experimental reactor of this type. About a year or so ago, they stopped construction and have been studying changes in the design. I have heard recently they that are going ahead with the construction of the small plant which will be about a 20,000 electrical kilowatt plant. When this is finished, it will provide quite a bit of information on this particular type of plant, but, of course, it will not be an economic plant at that size. It is hoped that later on very large plants of the natural heavy water cooled will be competitive in some parts of Canada, but they are years away from having a plan of this type in full-scale operation, and they have no firm plans to even start construction.

I might add that we have been cooperating with them fairly extensively on the technical features of the heavy water-cooled reactors.

Mr. TABER. I do not have any other questions.

Mr. FENTON. I have listened to a lot of experts here today. I cannot say that I know too much about atomic energy. However, you are asking for a lot of money.

I notice that 83 percent of your operating expenses go to the military; is that correct?

Mr. FLOBERG. Yes, sir; that is not as simple a figure as it sounds. That includes the military reactors. This is not 83 percent for weapons. It is for military reactors, raw materials, and the special nuclear materials, and so forth.

Mr. FENTON. Seventeen percent goes for civilian use?

Mr. FLOBERG. Yes, sir.

ACCOMPLISHMENTS IN CIVILIAN USE OF ATOMIC ENERGY

Mr. FENTON. Getting away from the military, I wonder if you could give a brief résumé of the accomplishments that you have achieved in civilian use.

Mr. FLOBERG. Over the last few years, there have been tremendous strides made toward the day of economical nuclear power. As has been pointed out in the discussion already, this has more significance to our friends abroad than it does to us in the short term.

In the long term, it may have some comparable significance to us. The strengthening of our allies through the EURATOM program is going to be one byproduct in a short time of the progress we have made on that score.

There was a short comment by Dr. Dunham this morning on the medical application of isotopes, and this is a field in which you would probably be especially interested.

There are the agriculture benefits of the use of isotopes which are quite significant and these are all landmarks which have been achieved in a civilian or peaceful application of the atom. This is a most attractive feature of the atom's future to all of us, and while that 17 percent is going to continue to grow, we certainly hope, and certainly if any of us can influence it to be a higher proportion of our total dollars, it is going to be so. Yet these are some achievements that have been made. This is not to deprecate the application that the military have made. We must remember in addition to the tremendous compendium of experience and knowledge and know-how that we have from the military atom, we also have peace and security as a direct product, I would say, of the military atoms, and this must be kept in mind when we compare the relative proportions of our budget spent on these applications.

I think we all agree that unless we have the peace and security, the civilian opportunities are not going to have much opportunity to flower.

Mr. FENTON. We have not gone into the detail yet of the justifications. I was just wondering if offhand you could tell us the breakdown of the 17 percent of the civilian effort into the various categories.

How much, for instance, are you using for medical research?

Mr. MCCARTHY. The estimate is $43 million for the biology and medicine program.

Mr. FLOBERG. It sounds like about 2 percent of the total budget.

THERMONUCLEAR DEVELOPMENTS

Mr. FENTON. I noticed this morning you mentioned something about the production of power from sea water. What kind of program is that?

Mr. FLOBERG. This is the thermonuclear research program, Dr. Fenton.

We have, as I mentioned in my general statement, four basic approaches to the problem of the fusion of light atoms. This is the action that takes place in the sun. It is an action that we are trying to duplicate on the face of the earth. To do this requires tremendous temperatures. We have been able to achieve only a fraction of those. It is 100,000,000° C., and we have achieved only a fraction of that.

The point is that the same raw material that we are trying to fuse in the test process exists in abundance in the ocean. If we could learn the trick that the sun does to cause the fusion of these little elements and if we can duplicate that trick, then we have an inexhaustible supply of raw materials.

Mr. FENTON. How far have you advanced?

Mr. FLOBERG. We have advanced farther than lots of people think.

Mr. FENTON. How many millions of degrees have you gotten to?

Mr. FLOBERG. Dr. Williams can answer that.

Dr. WILLIAMS. In certain of the devices at the University of California Radiation Laboratory, we estimate a sizable percentage of the ions in one of these plasma discharges to have the order of 10,000,000°. This is of the order of 10 percent of the temperature necessary to sustain a thermonuclear reaction, so this is well along the road when one considers the atoms of only a few hundred electron volts originally.

In terms of the number of atoms having this, we have also the problem of increasing those numbers, so we are attacking on two fronts—increasing the temperature and increasing the numbers. We have made real progress and we are well down the road in this direction.

SALINE WATER PROGRAM

Mr. FENTON. What have you thought of in the saline water program?

Mr. FLOBERG. Yes, sir. We have not only thought of it but we have done a lot of discussing of it within the Commission itself. While this is the principal responsibility of the Department of the Interior, nevertheless we are available for cooperation purposes with them and we have cooperated with them.

There are various places where we might possibly come into this if large quantities of power are required on site. It may be that we will go to this source of power or whatever the technique may be to desalinate the sea water. Up to now, as far as my limited knowledge extends the only process that has really any promise has been distillation and to the best of my further knowledge there has been no real solution to this on a large scale.

I must say we have been in contact with them on a good number of occasions to see to what extent we can contribute to the solution of these problems.

There have been lots of other suggestions and some other techniques are being marketed, but I think almost all of the others have been discarded now, and most people are still talking in terms of distillation.

Mr. FENTON. I was wondering what part you people could play in that program.

Mr. FLOBERG. Up to now, I must confess no big contribution that appears to be within the sphere of the Atomic Energy Commission.

(Further discussion off the record.)

PARTICIPATION OF MEDICAL SCHOOLS

Mr. FENTON. May I ask Dr. Dunham just how far the medical schools are cooperating in this program?

Dr. DUNHAM. The medical schools are cooperating wonderfully in the program. I do not recall an instance in which we have gone to a

medical school and asked for assistance for the program in which we have been turned down. They are going along a great deal under their own steam with the use of isotopes in the practice of medicine. They have been very helpful in developing information on the effects of radiation on human populations. In fact, a great deal of our work is carried out under contract with medical schools, usually a specific department, for the study of some of our radiation and biological problems.

I do not know where we would be at this point without the assistance of the medical schools. I think this goes back to the Manhattan District days. The medical schools made that program possible from the health and safety standpoint.

Mr. FENTON. I believe you stated how much money was involved.

Mr. MCCARTHY. $43 million.

Mr. FENTON. Has there been anything really outstanding in our medical program?

Dr. DUNHAM. If you are referring to a new cure for specific diseases, there are no new and outstanding developments.

As you know, radio iodine is being used more and more to treat hyperthyroidism and cases of cancer of the thyroid.

There are a lot of new developments, most of which are in the laboratory stage, studying metabolic processes which are giving us much better insight into the so-called degenerative diseases, the diseases of the blood cells and blood vessels, diabetes and things of that sort and also degenerative diseases of the central nervous system.

Recently at the Brookhaven National Laboratory, by using radioactive hydrogen in the form of tritium, they have developed a method of labelling the genes, the genetic material in a cell. This seemed a fairly academic interest at first, but from the standpoint of the Commission it has two very important aspects.

One, we will now get a much better insight into how radiation causes mutation, but perhaps of more immediate value for the practicing physician, it has enabled us to learn a great deal more than we ever did before about the production of leukemic cells in leukemia, how rapidly they are produced and how the rate of production varies with different states as a result of different types of treatment.

Therefore, I think that is a very important potential contribution.

Dr. Libby reminds me of some work at the University of Chicago in which during the past 3 or 4 years, largely stemming from a study which we sponsored, studying the effect of radiation on the blood-forming tissues, there now appears to be a hormone which controls the formation of red blood cells and which appears to be collaborated by the kidney. This they are getting out in purer and purer form and it should, before too long, I think, be available for the treatment of certain types of anemia. This is a very important contribution. I am glad Dr. Libby reminded me of it.

Mr. FENTON. I wish for the record, Dr. Dunham, you would review your accomplishments and list them so we might know what is being accomplished.

Dr. DUNHAM. We will be glad to.

(The information referred to follows:)

ADVANCES IN MEDICINE THROUGH ATOMIC ENERGY

I. IN TREATMENT

1. Radioiodine 131 is used to slow down or destroy the thyroid gland in the following conditions.

(*a*) Hyperthyroidism (overacting thyroid).

(*b*) Selected cases of angina pectoris and cardiac failure to relieve strain on the heart.

(*c*) Cases of pulmonary emphysema where oxygen transport becomes insufficient.

2. Radioiodine is used to destroy thyroid cancer cells. This is limited to selected cases in which the cancer cells take up the radioiodine actively.

3. Phosphorus 32 is probably the treatment of choice for cases of polycythemia rubra vera (overproduction of red blood cells).

4. Phosphorus 32 is used in palliation of leukemia. Many physicians prefer it to other forms of treatment. It is not a cure.

5. Gold 198 is used to reduce fluid accumulation and pain in cancers growing free in the abdominal cavity and chest cavity.

6. Radioisotopes in fixed sources.

(*a*) Cobalt 60 and cesium 137 thousand-curie sources are used in place of high voltage X-rays to treat cancer. They are simpler and usually cheaper than 1–2 million volt X-ray machines.

(*b*) Strontium 90 is used in applicators as a fixed source for treating benign tumors of the eye.

7. Cobalt 60 seeds and gold 198 seeds or in colloidal form are used to treat cancers of the uterine cervix, the prostate, and of the bladder.

8. Tiny pellets of strontium 90 have been implanted in the pituitary gland under direct vision and local anesthesia for destruction of the gland as above.

9. The proton beam from the 184-inch cyclotron is used to destroy the pituitary gland for the control of widespread cancers which are stimulated by this gland, such as cancer of the breast. This is highly experimental. It has also been used to control certain very severe cases of diabetes.

10. Use of slow neutrons from the Brookhaven reactor by neutron capture in boron 10 deposited in brain tumors as a method of destroying the tumor. This, too, is highly experimental at the present time.

II. DIAGNOSIS

1. Radioiodine 131 provides an excellent test of thyroid gland activity.

2. Radioiron provides a test for rate of red blood cell formation and the survival of transfused red cells.

3. Cobalt 60 labeled vitamin B–12 provides a sensitive test for pernicious anemia and disturbances of intestinal absorption.

4. Radioiodine 131 as iodinated human serum albumen is used:

(*a*) To locate brain tumors.

(*b*) To determine blood volume.

(*c*) To determine heart output of blood.

(*d*) To study blood flow in the liver.

5. Radiochromium is used to study rate of the red blood cell survival and destruction.

6. Radioarsenic 74 is used to locate brain tumors.

7. Phosphorus 32 is used to diagnose malignant tumors within the eyeball and to measure the life cycle times of the various blood cells.

8. Radioiodinated rose bengal dye is used as a sensitive test for liver function.

9. Radioiodinated diodrast is used to diagnose kidney disease.

10. Radiosodium is used to diagnose the adequacy of the blood supply to a diseased extremity or in a pedicle skin graft.

11. Radioiodinated fat is used to diagnose diseases of the pancreas and intestine involving disturbances of fat absorption.

In experimental medicine there is no limit to the applications of radioisotopes and nuclear radiations. Isotopes have made possible tremendous advances in our knowledge of carbohydrate (sugar), fat, and protein metabolism, and have increased our understanding of the nature of genetic material. A combination of radioisotopes as tracers with atomic radiation to interfere with certain processes has advanced our understanding of the mechanisms involved in defense against infectious diseases and even of the body's natural defense against cancer.

It was through the use of radioiron that scientists at the Argonne Cancer Research Hospital have been able to determine the presence in the blood of a hormone which controls red blood cell formation. They are well along the road to isolating this material in pure form. It was through the use of radiocarbon that scientists learned how acetic acid (the acid of vinegar) is used to build up some of the very complex sex hormones. Radioisotopes have been used to study the action of drugs such as morphine, digitalis and thyroxin. In fact, there are literally hundreds of examples of the use of radioisotopes in medical research.

The key point is that radioactive isotopes make it possible to study the dynamic life processes in the intact living cells; heretofore, the cell had to be killed to permit even inferences as to what it had been doing and studies of structure by means of the microscope were producing nothing new. Then, the radioisotope came at an opportune moment and has stimulated a revival of dynamic biology.

Mr. FENTON. That is all I have, Mr. Chairman.

URANIUM PROCUREMENT

Mr. BUDGE. As I understood the testimony this morning, your fuel-acquisition program is projected until 1966.

Mr. FLOBERG. The raw-material acquisition.

Mr. BUDGE. I am assuming that means primarily fuel; is that correct?

Mr. FLOBERG. No; it is primarily for weapons material eventually.

Mr. BUDGE. It is fuel for whatever you are going to build?

Mr. FLOBERG. It is fuel in that sense.

Mr. BUDGE. As I understood, between the years 1962 and 1966, you would spend $4.2 billion for that purpose; is that correct?

Mr. FLOBERG. No, sir; that is not correct. Those dates were from today until 1966 on the contracts in existence.

AUTHORIZATION TO CONTRACT

Mr. BUDGE. How far in advance are you authorized to contract for ores?

Mr. FLOBERG. We only obligate funds for a year at a time, but we are authorized by the law to guarantee the price for a period of time in advance.

Mr. BUDGE. How long is that?

Mr. EASON. The law does not specify the time, so therefore we do have what you might call an unlimited time for contracting. It is only a funding problem that we face.

Mr. BUDGE. That is one thing in which I am interested. Where there is contracting authority it seems to run almost into eternity and then it becomes the obligation of this committee to furnish the money after a program has been decided upon. We had that brought home to us rather forcibly in the tungsten program. It has cropped up in foreign aid, housing, and road construction. I wish you would insert a statement in the record which shows your authority and the extent of your authority to guarantee these prices and to bind the Government for a period in the future.

Mr. FLOBERG. May I ask Mr. Burrows to comment on that.

Mr. BURROWS. A great bulk of the contracts we have made for concentrates have been for 5 years. One of the reasons for this is it is

difficult to arrange any kind of financing for a period less than this and still amortize the plant. In making contracts we have to take into account a realistic amortization of the plant investment.

One could argue that you could make contracts for a longer period so that you would spread the investment more than this. To make a contract for much less than 5 years and have any recovery of the plant investment is a pretty difficult thing to do.

In the early days when we made the original guaranties of ore prices, one had to look forward to a considerable period of exploration and development before a pound of ore would come out of the ground. Therefore, it was necessary, when we made the guaranties under the ore-buying program, to bear this in mind.

Mr. BUDGE. I understand that Mr. Burrows and I am not intimating that I have any criticism of the Commission's past performance in this field. I am just curious about the authrity you have to perform in the future. Frankly, I very much enjoyed the presentation today. It seems to me there has been a spirit of volunteering information and that is rather unusual in my experience up here. Sometimes we have to be county-courthouse prosecutors to dig out the information. I think today I noticed an entirely different spirit. The information has been very freely volunteered and to me it is very refreshing.

FUND TRANSFERS TO AEC

I wish you would also furnish a statement for the record as to the funds which the AEC receives from other appropriation sources such as the Department of Defense and other agencies and the purposes for which those funds are utilized.

Mr. MCCARTHY. Does this include work we do for other departments?

Mr. BUDGE. Yes.

(The information referred to follows:)

Statement of work to be performed by AEC in fiscal year 1959 for other Federal agencies

Department of the Army:	
Production of training and operational suitability testing weapons, test and handling equipment, and certain developmental programs	$29, 200, 000
Services, adaption kits, and design and development	2, 315, 000
Department of the Navy:	
Reactor-core assemblies and related mechanisms	62, 000, 000
Adaption-kit program and services	500, 000
Department of the Air Force: Services, materials, and various studies	1, 000, 000
Federal Civil Defense Administration: Civil effects of full-scale weapons tests	1, 250, 000
Other orders for miscellaneous work	2, 185, 000
Total	98, 450, 000

GAS-COOLED REACTOR

Mr. BUDGE. The type of reactor that the Congress told the Commission to undertake is generally what is called the Calder Hall reactor?

Mr. FLOBERG. The Congress told the Commission to do a design study on it and report back by the 1st of April, but the answer to the real kernel of your question is "Yes, it was a Calder Hall type of reactor."

Mr. BUDGE. I wish you would furnish for the record a short statement as to why you refer to such a reactor as a primitive reactor. I think that is the word used earlier in your testimony.

Mr. FLOBERG. That might be an unduly harsh adjective but I will furnish a statement on that for the record.

(The statement referred to follows:)

Our studies indicate that natural uranium, graphite moderated, gas cooled reactors such as are used at Calder Hall can be improved in several major respects with known technology. They are operating at close to their ultimate limit with respect to outlet temperature, CO_2-graphite reaction, strength of the magnox cladding, and strength of the uranium slug.

A more modern version of this reactor would use slightly enriched UO_2 clad with stainless steel and would be operated at considerably higher temperature. Our gas cooled prototype is an example. Or it might employ a UC fuel element with berylium cladding such as the British are investigating.

CHANGES IN PROGRAM EMPHASIS

Mr. BUDGE. Most of the reactors which you have built and plan on building in the future are more or less reactors for a temporary purpose, are they not? They will either be torn down or converted to another type; is that not correct?

Mr. FLOBERG. At this stage, that statement is probably correct. The reactors that the Commission is building are either prototypes or experimental models or something of that sort. There is nothing in our program now that has a real good longevity.

Mr. BUDGE. In other words, the program of the AEC is a very fluid one and changes from week to week.

Mr. FLOBERG. No; that is not correct. The program is pretty well definitized.

Mr. BUDGE. Do you not have certain breakthroughs where you change the approach?

Mr. FLOBERG. Yes; there are things you learn in the course of time that markedly affect your emphasis.

For example, a year ago, although I was not on the Commission, I will bet you a penny that nobody came up here carrying a big banner for the organic-moderated reactor because a year ago this was not a very promising concept in the civilian reactor art.

Starting last summer when the organic moderated reactor went into operation at ARCO, a much more happy experience than had been anticipated was enjoyed by the reactor, so much so that today one of the really promising concepts is the organic moderated reactor.

This is a complete shift in the degree of optimism with which someone looks at that particular concept. That is not to say it is out of the woods. That is just to say on the basis of last year's experience success has been enjoyed and, consequently, more emphasis is being put on it than a year ago on the basis of what we knew at that time. This is true of other concepts.

AIRPLANE TESTING

Mr. BUDGE. In reverse, I assume you have had some rather disheartening results with regard to the airplane testing; that is, using the atomic engine in an airplane.

Mr. FLOBERG. No; I would not say we had any discouraging results there. I would say although this was a very ambitious undertaking

that the solution of the technical problems has moved along at a moderate rate, but that nothing insoluble has presented itself up to now. This does not mean that we are ready to go flying tomorrow, but this means if we keep driving away at these things, we are going to get all of these knots untied.

Mr. BUDGE. How far in advance do you program some of these things? It is my recollection that you, together with the Air Force, requested the money from the Congress and received it to build a landing field to launch that airplane and that landing field money was requested and obtained about 4 or 5 years ago.

Mr. FLOBERG. I suspect this was in a Department of Defense appropriation.

Mr. BUDGE. It was a joint request of the Department of the Air Force and the Atomic Energy Commission. Part of the funds were allocated to the AEC.

What is the status of that money?

Mr. MCCARTHY. The Department of Defense requested funds for the runway. We were going to build it as their agent. I am not sure what happened to the funds when it was determined not to build the runway at that time. I believe the Department of Defense explained it at that time. We were only to be their agent in the construction.

Mr. BUDGE. The Department of Defense made you a partner in the program whether you wanted to be or not?

Mr. FLOBERG. I would like to tell you my view on this runway or whatever facility turns out to be right for the nuclear airplanes.

The big problem is the nuclear part. It would be perfectly ridiculous to have the initial flight of this nuclear-propelled aircraft restricted by failure to complete the conventional facilities.

Mr. BUDGE. That is why I am curious to know why the funds for the airport were requested 4 or 5 years ago and you do not intend to fly the airplane for 3 or 4 years.

Mr. FLOBERG. I hope to get this job done.

Dr. LIBBY. This requires the wisdom of Solomon. I do not think we have been too wise in all of our decisions in the past. We have to get smarter, and if we do, we will get through eventually. However, the rub is in the materials program which seems to be pretty tough insofar as getting this reactor to work hot enough so that it can develop the thrust per unit of weight necessary to lift itself. The necessary shielding if you are going to put a crew aboard the airplane is a terrific requirement. We are going to bear down on these materials problems because we think that this is the real point of doubt. There is where the decision is really going to be made.

Mr. FLOBERG. The question of the safety of overland flight is a factor which has been introduced into this problem, I suspect, since the money was made available initially, and this factor has not been completely resolved as yet.

ACQUISITION OF LAND IN IDAHO

Mr. BUDGE. Then, for the record, I wish you would furnish a little statement as to why it is now the request of the Atomic Energy Commission to acquire an additional 140,798 acres of land adjacent to the present national reactor testing station. A lot of people had the idea that was the purpose of the acquisition.

Mr. FLOBERG. I believe we can furnish you with a satisfactory statement on that.

(The information referred to follows:)

LAND ACQUISITION, NATIONAL REACTOR TESTING STATION, IDAHO

In justification of a request for $1 million under project 58–f–3, "Land acquisition, national reactor testing station, Idaho," at the time of congressional consideration of the AEC's fiscal year 1958 budget estimates, it was stated that, with the increased operations being conducted at the national reactor testing station and those contemplated for the future, additional land was essential for the protection of the population in the area of that site. It was explained that, in the testing of reactor prototypes of relatively high power and/or uncertain operating characteristics, as well as in the conduct of reactor experiments over the widest possible range of operation conditions, there is a possibility of contamination from wastes being released to the atmosphere which could endanger the health, safety, and property of nearby inhabitants. Territories of potential contamination danger which were proposed for acquisition are in the northern, northeastern, and eastern land areas adjacent to the present site.

The considerations on which the initial request for this acquisition was based have not changed, although there has been a relatively minor reduction in the acreage requirements from 149,770 to 140,798 acres.

Mr. BUDGE. If it can be done under the classification procedures, I would appreciate a showing in the record as to the status of the experiments in connection with the airplane with the atomic-powered plant and, also, the status of the funds to test it. If you have doubt now as to testing it over land, I would like to know if the Air Force is still holding on to the money to build that landing strip which is, of course, about 700 or 800 miles inland.

Mr. FLOBERG. This was a factor that was introduced into the problem, and it is being studied in detail.

(The information requested follows:)

STATUS OF FUNDS APPROPRIATED TO THE AIR FORCE

Funds appropriated to the Air Force were not obligated in the year in which appropriated and, therefore, lapsed. The item has not been reprogramed to date.

STUDIES IN CERAMICS

Mr. BUDGE. The other day, there was quite a substantial supplemental request which, apparently, the Bureau of Mines considers as urgent; otherwise, it would not be in the supplemental, at least it is not supposed to be, for studies on ceramics.

I noted in your statement here today that you were conducting a similar study on ceramics, and I would ask that you furnish for the record a statement as to just what your program is and how it varies from the Bureau of Mines. Your language in the justification is almost identical to that used by the Bureau of Mines.

Mr. FLOBERG. It is very interesting to me, and I will supply such a statement.

(The statement referred to follows:)

CERAMICS PROGRAM

The Atomic Energy Commission program on ceramics differs from that of the Bureau of Mines in two important respects. The first is that the AEC is concerned not only with the properties of ceramics in general, but, specifically, with these properties as they are affected by irradiation in a reactor.

The other difference lies in the nature of the ceramics which are of interest to the AEC. These are, principally, compounds in which thorium, uranium, or plutonium are involved as major ingredients. The Bureau of Mines would, in general, not be interested in ceramics containing these elements.

Mr. RABAUT. The committee will stand in recess until 10 o'clock tomorrow morning.

TUESDAY, JULY 1, 1958.

Mr. RABAUT. The committee will come to order.

RAW MATERIALS PROGRAM

We will take up this morning the raw materials. The 1959 request was for $680 million, and the appropriation for 1958 was $596,901,000, or an increase of $83,099,000. We will insert pages 13 through 23 in the record.

(The pages referred to follow:)

RAW MATERIALS PROGRAM—OPERATING COSTS

Program statement

Estimate, fiscal year 1959	$680, 000, 000
Estimate, fiscal year 1958	596, 901, 000
Increase	83, 099, 000

Uranium concentrate procurement in fiscal year 1959 is estimated to be 31,989 tons as compared with estimated fiscal year 1958 procurement of 26,875 tons. This procurement, together with other raw materials procurement, is budgeted in fiscal year 1959 at $677,147,000, which represents 99.6 percent of the total cost of the raw materials program. Uranium concentrate costs comprise 94.3 percent of total program costs. The average price per pound of uranium concentrates from all sources is estimated to be moderately lower in fiscal year 1959 than in fiscal year 1958.

The largest tonnage increase in concentrate procurement in fiscal year 1959 will result from additional United States production, which is expected to increase approximately 3,350 tons or 33 percent over fiscal year 1958, followed closely by Canada, tonnage from which is estimated to increase approximately 3,050 tons or almost 30 percent over fiscal year 1958. Concentrate procurement from overseas sources is expected to be approximately 20 percent lower than in fiscal year 1958.

Although the greater part of the total cost of $680 million budgeted for the raw materials program in fiscal year 1959 will be incurred for uranium concentrate procurement, funds also will be needed for the procurement of uranium ores, vanadium, thorium and other source materials. The Commission will continue to acquire at published prices certain quantities of domestic uranium ores which meet specifications. The Commission is committed under certain older procurement contracts to purchase vanadium pentoxide generated as a byproduct of uranium concentrate production which the contractor desires to sell. More recent contracts provide for the contractor being reimbursed for the vanadium contained in the mill tailings, title to which remains with the Commission. Thorium is a material with potential uses in the power reactor and weapons fields and is procured under a Commission stockpile goal.

The resource evaluation (formerly exploration) program supports the uranium procurement program and is budgeted at a moderately lower level in fiscal year 1959 than in fiscal year 1958. From fiscal year 1948 up to fiscal year 1955 a large part of the effort under this program was devoted to exploration for uranium, largely because private exploration was inadequate in view of the need for expanded uranium production. Thus in fiscal year 1948, when the aggressive program for increasing uranium supplies in the United States began, a considerable portion of the total cost of the program was for physical exploration. The program reached a peak of about $13 million in fiscal year 1954 of which approxi-

mately $10 million was expended for physical exploration. Thereafter, Government physical exploration decreased until its discontinuance in fiscal year 1956, this being made possible by the substantial increase in private exploration and improved uranium supplies. Accordingly, AEC's domestic exploration program has been largely eliminated. However, one of the functions of the exploration program—appraisal of private uranium activities in order to develop uranium resources data—must be continued in order to provide information required in support of the procurement program and for long-range planning. The foreign program provides for technical assistance to friendly countries, including training in uranium exploration techniques and reconnaissance.

The second supporting program, process development, is budgeted at a much lower level in fiscal year 1959 than in fiscal year 1958. Process development seeks to develop and improve methods for extracting uranium from existing and new sources of ore, some of which offer difficult treatment problems. This program has materially reduced production costs and improved recoveries in existing mills and enabled the negotiation of lower concentrate prices with new mills.

Summary of estimates by category

Category	Actual fiscal year 1957	Estimate, fiscal year 1958	Estimate, fiscal year 1959
1. Resource evaluation [1]	$3,057,130	$2,450,000	$2,100,000
2. Procurement of source materials	391,326,802	591,982,000	677,147,000
3. Process development	2,964,313	2,100,000	500,000
4. Equipment not included in construction projects	487,763	369,000	253,000
Total, raw materials program	397,836,008	596,901,000	680,000,000

[1] Excludes cost of $4,148,153 in fiscal year 1957 and $2,799,000 in fiscal year 1958 of the activities performed by the United States Geological Survey for the AEC in those years. These activities will be budgeted by the USGS in fiscal year 1959, and these costs, therefore, were transferred to that agency for purposes of comparison.

1. Resource evaluation, $2,100,000

(*a*) *Domestic, $1,750,000.*—The domestic resource evaluation program involves a continuous appraisal of private and other non-AEC uranium geologic, exploration development, and mining activities in order to develop data on uranium resources, to permit ore and concentrate production forecasts required to administer the present uranium procurement program, and to support AEC long-term planning. More specifically, the major activities in the domestic program will be:

(1) Field investigation and interpretation of all available data developed by private exploration and mining activity to provide the basis for computation of accurate ore reserve figures and estimates of production rates of uranium ore and concentrates.

(2) Specific area economic-geologic appraisals to provide needed data for concentrate procurement contract negotiations and administration.

(3) Evaluation of developments in uranium geology and exploration techniques and their application to functions (1) and (2) above and to the appraisal of potential uranium resources and production relative to long-term projections of uranium requirements.

Actual costs for fiscal year 1957 and estimates for fiscal years 1958 and 1959 for the domestic resource evaluation program, follow:

Fiscal year 1957	$2,862,665
Fiscal year 1958	2,200,000
Fiscal year 1959	1,750,000

The $450,000 cost decrease in fiscal year 1959 from fiscal year 1958 will result from further reduction in the activities under this program.

(*b*) *Foreign, $350,000.*—Foreign program costs in fiscal years 1957 through 1959 are:

Fiscal year 1957	$194,465
Fiscal year 1958	250,000
Fiscal year 1959	350,000

Fiscal year 1959 costs provide for the salaries, quarters, and other allowances, travel and other costs of AEC technical personnel assisting in training and in

cooperative uranium evaluation programs in a number of foreign countries. In fiscal year 1959, it is expected that AEC personnel will be stationed in Peru, Chile, Colombia, Pakistan, and other countries and will make brief visits to a number of other friendly nations throughout the world.

The $100,000 increase in fiscal year 1959 over fiscal year 1958 costs is for technical assistance to Brazil.

2. Procurement of source materials, $677,147,000

(a) Uranium concentrates and oxide, $641,000,000.—Requirements for uranium concentrates are directly related to the amount of this material needed to produce the special nuclear materials required for weapons manufacture, the peacetime applications of atomic energy and for research purposes.

The major commitments of the Commission for uranium concentrate procurement are under contracts with: (1) Individual private processing mill operators in the United States; (2) the Canadian Government, a separate contract being negotiated for each producing property; and (3) the South African Government. The United States and Canadian commitments are under fixed-unit price contracts, each of which provides for a specified total maximum tonnage to be delivered during the contract period. Delivery of the total tonnage commitment under each contract is regulated in most United States contracts by limiting the quantity of uranium ores that may be fed to process during each 3-month period throughout the period of the contract. Underlying each contract with the Canadian Government for a producing property is, by reference, a contract between that Government and the individual producer which specifies approximate monthly rates of delivery. The South African agreement is a cost type, but not a cost plus, agreement in that if production costs are reduced, mine profits increase, and the price paid by the Commission decreases. South African production is limited to the output of each processing plant as approved under the agreement, and since mine production and ore grade are very uniform, concentrate production is relatively stable.

Thus, under the above-described contractual commitments, uranium concentrate procurement costs, which represent almost 95 percent of the total costs budgeted, constitute a firm obligation of the Commission.

It might be mentioned that, with the exception of Canada, no new contractual commitments for South African or other foreign uranium concentrate procurement have been made during the past 2 years. In the case of Canada, contracts have been negotiated over the past year or two covering only overall commitments made to the Canadian Government in prior years.

Hereafter, the only additional commitments now foreseen for any source will be under new contracts that may be negotiated with private mill operators in the United States under our overall domestic program.

The aggregate quantity of U_3O_8 budgeted for fiscal year 1959 is 31,989 tons, 84 percent of which is United States and Canadian production.

The largest production increase is expected to occur in the United States. Seven additional processing mills will begin producing in fiscal year 1958 and 5 more, under construction or contracted for, will enter production in fiscal year 1959, bringing the total number of mills to 23 in fiscal year 1959. These new mills, together with increased production from existing mills, are expected to increase United States concentrate production in fiscal year 1958 by approximately 33 percent over fiscal year 1957, and fiscal year 1959 production by 3,355 tons, or 33 percent more than the production estimate of 10,100 tons for fiscal year 1958. A relatively small production of concentrates from domestic phosphatic sources is included in the above United States tonnages.

Additional production from 7 new producing properties in Canada, bringing the total number to 18, is estimated to increase the tonnage received in fiscal year 1958 by 205 percent over fiscal year 1957, and fiscal year 1959 Canadian receipts by almost 30 percent over estimated fiscal year 1958 receipts. A substantial part of Canada's increased production in fiscal year 1959 will be sold directly to the United Kingdom, in accordance with an arrangement negotiated between the United States, Canada, and the United Kingdom.

U_3O_8 procurement in fiscal year 1959 from overseas sources through the Combined Development Agency (a joint United States-United Kingdom purchasing agency) is expected to be 20 percent lower than in fiscal year 1958, chiefly because of lower concentrate deliveries from the Belgian Congo, South Africa, and Australia due to the allocation of a larger proportion of CDA production to the United Kingdom.

The costs of uranium concentrate procurement from the United States and foreign (including Canada) sources for fiscal year 1957, fiscal year 1958 and fiscal year 1959 are on the next page.

	Fiscal year 1957			Fiscal year 1958			Fiscal year 1959		
	Tons U_3O_8	Unit price (per pound)	Cost (thousands)	Tons U_3O_8	Unit price (per pound)	Cost (thousands)	Tons U_3O_8	Unit price (per pound)	Cost (thousands)
United States	7,582	$10.53	$159,621	10,100	$9.66	$195,169	13,455	$9.24	$248,716
Foreign sources	8,576	11.19	191,888	16,775	10.92	366,518	18,534	10.77	399,380
Total, uranium concentrates	16,158	10.88	351,509	26,875	10.45	561,687	31,989	10.13	648,096
Add refining costs: Canada (upgrading U_3O_8 to UO_3)	-------	-------	4,263	-------	-------	5,199	-------	-------	5,199
Less:									
Usage of uranium ores	-------	-------	6,358	-------	-------	7,338	-------	-------	2,700
Sale of uranium ores to domestic processing mill contractors	-------	-------	9,710	-------	-------	9,162	-------	-------	9,595
Uranium concentrates cost, net	-------	-------	339,704	-------	-------	550,386	-------	-------	641,000

NOTE.—It will be noted that in all 3 fiscal years the average unit price paid for United States uranium concentrates is lower than the average price paid for concentrates from foreign sources. This is due primarily to differences in the grades of ores processed. Domestic ores give an average recovery of about 5 pounds of U_3O_8 per ton, in Canada the average is about 2 pounds per ton, and in South Africa about ½ pound per ton. In other words, for each ton of domestic ore mined and milled, Canada must mine an average of 2½ tons and South Africa 10 tons to obtain the equivalent uranium production.

Additional information of a classified nature is presented on page 24.

(*b*) *Uranium ores, $8,825,000.*—The Commission is committed to purchase at published prices limited quantities of domestic uranium ores which meet specifications. Industry is at present buying about 95 percent of all uranium ore mined and by fiscal year 1959 is expected to purchase a higher percentage. Lower price per ton in fiscal year 1959 is based on lower grade ore.

AEC ore procurement in the three fiscal years is shown in the following table:

Fiscal year 1957:	
Tons of ore	613,473
Price per ton	$32.44
Cost	$19,900,000
Fiscal year 1958:	
Tons of ore	225,000
Price per ton	$31.31
Cost	$7,044,000
Fiscal year 1959:	
Tons of ore	351,000
Price per ton	$25.14
Cost	$8,825,000

(*c*) *Bonus incentive for initial production, $3,000,000.*—Under the terms of AEC's Domestic Uranium Program Circular 6 a graduated bonus of up to $35,000, depending upon the quantity and grade of ore, is paid for the initial 10,000 pounds of U_3O_8 contained in acceptable ores delivered from a new eligible uranium mine to a buying station or processing mill.. Bonus payments have been and will continue to be important by giving the prospector and small miner financial assistance during the early stages of development and mining. In the case of mines in new areas remote from mills or buying stations, the initial bonus frequently is an important factor in enabling the miner to ship his ore during the development period.

To February 28, 1958, a total of 1,004 mines had been certified as eligible and the full benefit payments allowed had been paid to 226 of those mines. It is expected that in fiscal year 1959 approximately 175 mines will be certified as eligible to receive the bonus and that payment will be made on 900,000 pounds of U_3O_8.

Bonus payments amounted to $2,982,965 in fiscal year 1957 and are estimated to be $2,203,000 in fiscal year 1958.

(*d*) *Vanadium, $3,110,000.*—Certain unit price domestic uranium concentrate contractors have the option of disposing of the byproduct vanadium pentoxide either on the open market or to the Commission at a fixed contractual price per pound. This contingent liability is a contractual commitment on the part of

the Commission. Provision is made in this budget for the purchase of only a portion of the vanadium pentoxide that will be produced by these contractors in fiscal year 1959. This is based on the assumption that the remaining production will be sold on the open market. Should the market fail to absorb this production, it could result in additional costs of approximately $3,450,000.

Other uranium procurement contracts provide for the Commission reimbursing the contractor for the vanadium contained in the mill tailings, from which the vanadium may be extracted later as needed, rather than committing the Commission to purchase all vanadium pentoxide delivered by the contractor. This development is due to the national stockpile goal for vanadium having been reached. It also results in lower costs since the contractual price per pound of vanadium contained in tailings is $0.31 rather than the price of about $1 per pound paid for vanadium pentoxide. The tailings estimates are based on the average grade vanadium contained in ores available to each mill operating under this type of contract.

Actual tonnage and costs in fiscal year 1957 and estimates for fiscal years 1958 and 1959 follow:

	Fiscal year 1957			Fiscal year 1958			Fiscal year 1959		
	Tons	Unit price (per pound)	Cost	Tons	Unit price (per pound)	Cost	Tons	Unit price (per pound)	Cost
			Thousands			*Thousands*			*Thousands*
Vanadium pentoxide	220	$0.984	$435	2,063	$0.984	$4,064	507	$0.984	$1,000
Vanadium in tailings	2,766	.31	1,715	2,787	.31	1,724	3,403	.31	2,110

(*e*) *Thorium, $504,000.*—Thorium is a source material with potential uses as a fissionable material for power reactors and as U–233 for weapons use which is procured under a Commission stockpile goal.

The AEC-owned thorium stockpile goal is 2,500 tons of contained thorium metal. The Commission is committed under existing unit price contracts for the acquisition shown hereunder.

Thorium procurement in fiscal years 1957, 1958, and 1959 is programed as follows:

	Fiscal year 1957			Fiscal year 1958			Fiscal year 1959		
	Metal tons	Unit price (per pound)	Cost	Metal tons	Unit price (per pound)	Cost	Metal tons	Unit price (per pound)	Cost
			Thousands			*Thousands*			*Thousands*
United States	195	$6.41	$2,498	52	$4.80	$499	52	$4.85	$504
Foreign	28	5.32	298	367	5.43	3,986	0	0	0
Total acquisition	223	6.27	2,796	419	5.35	4,485	52	4.85	504

The AEC-owned thorium metal content inventory position as of June 30, 1959, after taking the above fiscal year acquisitions into account, is expected to be:

	Tons
Inventory as of June 30, 1957	1,458
Acquisition in fiscal year 1958	419
Acquisition in fiscal year 1959	52
Total inventory as of June 30, 1959	1,929

About 50 tons of contained thorium metal remain to be acquired in fiscal year 1960 under executed contracts, resulting in a stockpile more than 500 tons short of the Commission goal of 2,500 tons. Additional thorium of up to 800 tons, however, will be available to the AEC by fiscal year 1960, if needed, under an agreement with another Government agency.

(f) Other source materials, $20,708,000.—This activity provides for the procurement of other source materials required in the Commission's production program.

Additional information of a classified nature is presented on page 25.

3. Process development, $500,000

Costs under this category will be greatly reduced in fiscal year 1959 as only a limited effort is contemplated in such fields as amenability testing of ores and small-scale pilot-plant testing in facilities of the United States Bureau of Mines at Salt Lake City, Utah. The principal process development activities carried on at the Raw Materials Development Laboratory at Winchester, Mass., and the pilot plant at Grand Junction, Colo., will be terminated during fiscal year 1959; however, certain chemical studies concerning health hazard problems related to radioactive substances will be continued.

The major segments of process developments costs for fiscal years 1957, 1958, and 1959 are as follows:

	Fiscal year 1957	Fiscal year 1958	Fiscal year 1959
Raw Materials Process Development Laboratory, National Lead Co. (chemical studies)	$1,954,967	$1,675,000	$300,000
Other contractors—principally U. S. Bureau of Mines (domestic ores)	324,974	185,000	200,000
Shales, Columbia University	684,372	240,000	0
Total process development	2,964,313	2,100,000	500,000

4. Equipment not included in construction projects, $253,000

Equipment for fiscal year 1959 will be required in support of the resource evaluation, uranium concentrate purchase, and ore-buying activities of the raw materials program. Costs are estimated at $253,000 for fiscal year 1959 as compared to the fiscal year 1958 estimate of $369,000. The following table reflects a comparison by installation of equipment costs with related costs in the raw materials program:

Installation	Fiscal year 1959 (in thousands)	
	Other operating costs	Equipment costs
Resource evaluation geological field equipment	$2,100	$110
Sampling and assaying of concentrates and ores for payment purposes, and ore buying at various locations	9,475	83
Equipment for the Commission-owned processing mill at Monticello, Utah	4,061	60
Total	15,636	253

Additional information of a classified nature is contained in the following classified pages 24 and 25.

ADDITIONAL DOMESTIC PROCUREMENT

Mr. RABAUT. You have recently completed a survey of milling capacity for uranium ores, the need for which apparently grew out of reactions to your policy statement of last October limiting your contracts for additional domestic concentrates.

Please give us an explanation of this problem.

Mr. FLOBERG. I will ask Mr. Johnson to reply in detail.

Mr. RABAUT. Mr. Johnson.

Mr. JOHNSON. Mr. Chairman and members of the committee, the problem arose from the rapid development of our domestic uranium resources and a desire on the part of those who had developed uranium to market as much as possible in the shortest period of time.

We had given the public some notice in advance, through various statements, that we were approaching the time when the interest of the Government and the Commission would be to maintain production at some given level rather than a continual expansion.

In the earlier period of our program the pressure was to get as much uranium as possible from every source. We started with very meager supplies, and the major problem was to develop enough uranium to meet the requirements. Now, as domestic supplies grew, we had both foreign commitments and domestic commitments, and it appeared desirable from the standpoint of the Government as well as the domestic uranium industry to have a more stabilized production rather than a continually expanding one which, in the end, might be subject to a very drastic reduction.

Consequently, the position was taken last October to limit production as far as possible to that which would come out of existing contracts. This, as you have indicated, Mr. Chairman, created a storm of protest. A survey was made. This survey indicated that the sharp change in the Commission's procedures would result in difficulties for a number of our domestic uranium miners who had spent considerable sums—large sums as a matter of fact—in finding and developing ore, and unless there were some additional markets they would have only frozen assets, and many of them would be unable to hold their property.

The survey developed specific information with respect to each of the individual areas, and the indication was that some additional milling capacity was necessary in order to provide those who had spent money for development of ore with a reasonable market.

A review of the Commission's requirements indicated that this additional production would fall within established procurement goals. As a result the announcement of April 2, 1958, was issued.

Mr. RABAUT. Would the purchase and stockpiling of ores be a practical and less expensive alternative to the construction of additional milling capacity?

Mr. JOHNSON. We went into that in detail, and the conclusion was that it would not be.

Mr. RABAUT. Based on what?

Mr. JOHNSON. This was based on the fact that stockpiled ores are subject to erosion losses. Eventually, to have a useful product it would be necessary to mill the ores and mills would have to be built in the end, anyway. In the meantime there would be extensive losses.

Also, the limiting of the purchases of ore in the absence of a mill, presents difficult problems. A mill purchases only the ore that can be processed by the type of mill that has been built. It is difficult to establish standards of ore for mills that have not been built. We have had some experience on that in the past, and find that when this is done there is apt to be an accumulation of refractory ores, i. e., ores which cannot be processed economically. By limiting the market to the types of ores the mills can handle, we get the program on a more businesslike basis and avoid serious losses.

A notable example is the lignites of the Dakotas. There it would have been a difficult problem to stockpile ores. There would have been a question as to what kind of milling process, if, any, could treat the ores.

Mr. RABAUT. You know this is a big problem and deals with big money and deals with big interests. The thought of this committee would be, where does Uncle Sam get off on this deal?

Mr. JOHNSON. On the milling operation?

Mr. RABAUT. Yes.

Mr. JOHNSON. The purchase of concentrates, as I indicated, Mr. Chairman, is based upon the Commission's requirements, and it has been geared to purchases designed to meet the requirements of the Commission. Even with the expanded program which is now in effect, purchases will fall within a procurement goal established by the Commission about 2 years ago.

Mr. RABAUT. My thoughts go back to what your own ideas were before, and there seems to be a complete about face to what they are today. What was your statement last year on the subject? Here are your own words here:

> I would say yes. I will say that there will be sufficient mills to take care of the production as now projected.

Those are your words.

Does it not look like there is pressure on somebody someplace to do what you are doing now?

Mr. JOHNSON. No. The problem arose very largely because of the major developments in the Wyoming area, in the lignite area, and a new discovery in Texas. Those are the three areas which developed very rapidly during the past year and were responsible for the increase.

These are the areas which are being taken care of by the limited expansion program, with minor exceptions elsewhere.

Certainly this has been a growing program, and the conclusions or any statement regarding the ore supply at one period is subject to change with new developments. We started out, as I mentioned earlier, in 1948 with a small production in the United States. We were dependent entirely on overseas sources.

It is only by continuing development that we have brought the United States production up to the point where we can not only be assured of taking care of any of our military programs, but we have a sound basis for moving ahead with a domestic power program.

It might be of interest to this committee to know that if we had only the uranium sources which were known 10 years ago, I doubt that there would be any basis for proceeding with plans for an extensive power program. Our problem then was to meet the military requirements, and that was the major job.

Practically all of the power programs, plans for power development throughout the free world, will depend upon their supplies of nuclear fuel, upon uranium which has been found and developed as a result of the Commission's program.

Mr. RABAUT. Are you currently amending any contracts for concentrates or entering into new ones involving additional milling capacity?

Mr. JOHNSON. We are currently negotiating contracts to cover the additional milling capacity that was announced in the April 2 statement. This will involve 1 or 2 new mills and possibly an expansion to a few of the existing mills.

FUNDS REQUIREMENT FOR NEW MILLING CAPACITY

Mr. RABAUT. How much additional money is projected into this budget for additional milling capacity?

Mr. JOHNSON. In the 1959 budget, we have provided very little for the additional program.

Mr. RABAUT. Give us the amount.

Mr. MCCARTHY. There is nothing in this estimate for deliveries from the new mills which will be under negotiation. This will appear in the 1960 budget.

Mr. RABAUT. How much for the commitment?

Mr. JOHNSON. The total production from the new mills will be about 3,000 tons of U–308 per year, which will be in the neighborhood of $50 million to $60 million a year.

Mr. RABAUT. How much for this year and how much for 1959? These are obligations, now.

Mr. JOHNSON. We do not have it in this year's budget.

Mr. RABAUT. There are no obligations this year, then?

Mr. JOHNSON. No. That is, there is no money in the 1959 estimate.

Mr. MCCARTHY. There is no money for obligation for this year. The contracts which will be let this year will call for budgeting in 1960 for the deliveries from those mills in 1960 to the extent that they are in operation.

The overall commitment, as Mr. Johnson pointed out, when these mill contracts are signed, would be $60 million a year over a period of 5 years. That is the estimate based on the milling capacity.

Mr. RABAUT. Under selected resources under the obligations?

Mr. MCCARTHY. There is no money under selected resources for these contracts, Mr. Rabaut.

BENEFICIARIES OF ADDITIONAL MILLING CAPACITY

Mr. RABAUT. What are the names of the ore-producing companies or individuals who will benefit by the new milling capacity?

Mr. JOHNSON. We do not have contracts at the present time.

Mr. RABAUT. I do not care about the contracts. You must know who is going to do it.

Mr. JOHNSON. Not necessarily. In the Wyoming area there have been several companies which have been proposing to build mills.

Mr. RABAUT. Maybe we should have the names of the several companies.

You can place it in the record.

Mr. JOHNSON. We will place it in the record.

Mr. RABAUT. How many of these are already producers? You may put that in the record. With whom are your new milling contracts being placed?

Mr. JOHNSON. I think that is the same question as the other one.

Mr. RABAUT. One is producers and this is about the contracts for milling capacity. The first question deals with ore production, and the last one deals with milling capacity. You may supply that for the record.

Mr. JOHNSON. We will be glad to do that.

(The information requested follows:)

MILLING COMPANIES INVOLVED IN NEGOTIATIONS UNDER THE AEC DOMESTIC EXPANSION PROGRAM ANNOUNCED APRIL 2, 1958

The announcement of April 2, 1958, covering limited expansion of domestic uranium procurement provided for additional milling capacity totaling approximately 3,000 tons of ore per day. This additional milling capacity was tentatively assigned to 5 areas either having no market for ore, or an inadequate market. These areas are:

New mill capacity	*Tons per day*
(1) Southeast Texas	600
(2) North Dakota-South Dakota (lignites)	600
(3) Wyoming	1,700
(4) Colorado Front Range	200
(5) Nevada (Austin)	200
Total	3,300

1. Southeast Texas

Negotiations are underway with the Palangana Corp. which is a company jointly owned by Columbia Southern Chemical Corp.-Union Carbide Nuclear Co. The majority of the uranium ore reserves in southeast Texas has been developed by Columbia Southern in Duval County. Columbia Southern selected Union Carbide Nuclear as a partner because of its experience in uranium milling. The contract now being negotiated is based upon a proposal to construct a uranium ore processing plant having a capacity to treat 600 tons of ore per day.

2. North Dakota-South Dakota lignite area

The uraniferous lignite deposits of North and South Dakota are widely scattered and under different ownership. Negotiations are underway between AEC and the International Resources Corp. for a uranium concentrate purchase contract for the production from a custom mill having a capacity to treat 600 tons of lignite per day. This is the only proposal now before the Commission involving the processing of Dakota uraniferous lignite.

3. Wyoming

As a result of recent discussions with uranium ore producers of the Wyoming area, it is anticipated that firm proposals will shortly be received by AEC covering the 1,700 tons of additional milling capacity allocated to that area. These proposals probably will include expansions to 2 of the existing mills, the 1 owned and operated by Western Nuclear Corp. and the 1 owned and operated by Lucky Mc Uranium Corp.; and at least 1 new mill. Pending the receipt of specific proposals based upon decisions made by the uranium ore producers, we are not in position to list the companies which will be involved in the negotiations.

4. Colorado Front Range

The Cotter Corp. is now constructing a 50-ton pilot plant in the Colorado Front Range area. This company has advised the AEC of its interest in building the 200-ton mill allocated to this district. Some other companies also have expressed interest. Contract negotiations will await results of the operation of the pilot plant and also metallurgical test work being conducted for the AEC by the United States Bureau of Mines.

5. Nevada

The Apex Minerals Corp. which has developed the only significant ore reserves in the Austin, Nev., area is interested in constructing a mill. Negotiations involving the construction of this mill depend upon plans developed by the Apex Minerals Corp.

Mr. RABAUT. How many of those are operating mills?

Mr. JOHNSON. We can add that to the record.

ALTERNATIVE TO BUILDING MORE MILLING CAPACITY

Mr. RABAUT. Will it be cheaper to pay transportation costs for moving ore to existing mills than to provide more mill capacity?

Mr. JOHNSON. The cost of moving ore is expensive, and the average is about $6 a ton per hundred miles. The average grade of ore is

about 5 pounds of U_3O_8 recovered. The cost would be about $1.40 a pound, if my mathematics are correct. As you go up it is uneconomic.

Mr. RABAUT. You figure it out and give the answers to the questions. The details we cannot very well work out here. If some of it has to be moved a great distance, from your explanation, it may not be so good, but you may take a look at the question.

Mr. JOHNSON. Yes, sir.

(The information requested follows:)

In general, it is not economic to move average grade domestic uranium ore more than 50 to 100 miles. Trucking costs average about 6 cents per ton-mile so that a 100-mile haul costs about $6 per ton of ore or about $1.40 per pound of recovered U–308. This represents 17 percent of an $8 U–308 price. With regard to the limited new milling capacity for uranium ores announced on April 2, 1958, in some areas such as southeast Texas and central Nevada, there are no mills within several hundred miles and it would be uneconomic to ship the ore to an existing mill. In other cases special processes are required which would preclude the use of existing mills provided haulage was not a factor. The lignite ores of North Dakota and South Dakota and the refractory ores of the Colorado front range are in this category.

In central Wyoming where the largest expansion is contemplated, it is expected that additions to centrally located existing mills would provide a considerable part of the new capacity. However, 1 or 2 new mills might be desirable for competitive reasons. These mills would be of sufficient size to achieve about minimum operating costs.

Mr. JOHNSON. As a general principle, the mill should be built as close to the ore supply as possible. That is standard practice throughout the mining industry.

MINING BONUS PAYMENTS

Mr. RABAUT. In view of the ore supply and milling situation as you now describe it, why are you continuing your bonus-payment plan for which you are requesting $3 million?

Mr. JOHNSON. The bonus plan now in effect was established about 2 years ago. It runs to March 31, 1960.

Mr. RABAUT. This was to coax people to go ahead and do this. Was this not the idea of the bonus plan?

Mr. JOHNSON. It was not a plan to coax people. It was a special aid to miners, and particularly for the small operators who were trying to develop new deposits in new areas away from the mills.

Mr. RABAUT. It was to make it attractive. I see no other reason for it.

Mr. JOHNSON. It was to assist in the development of new mines during the initial period.

Mr. RABAUT. Why are we not dropping it now?

Mr. JOHNSON. We have a commitment which now runs to March 31, 1960.

Mr. RABAUT. What kind of commitment is it?

Mr. JOHNSON. It is a published circular issued by the Commission which extends to March 31, 1960.

Mr. RABAUT. I just feel from the testimony before us that there is not much use for its existence now.

Mr. MCCARTHY. I think it should be pointed out, Mr. Chairman, that those mines which have been previously certified have not received full payment.

Mr. RABAUT. All right. We have $3 million here. How much of that money is to complete payments and how much of it is for new payments?

Mr. JOHNSON. I can give you the basis for the estimate and have that inserted in the record.

(The information follows:)

Bonus-payment plan

For new mine certifications	$768,000
For mines previously certified	2,232,000
Total	3,000,000

Mr. JOHNSON. I should like to point out, Mr. Chairman, that our domestic ore reserves today are about 75 million to 80 million tons. The mining rate in calendar year 1959 will be from 7 million to 8 million tons a year, so that while we are in a very comfortable position as far as the immediate requirements of the Commission are concerned for the next 10 years, we still will require new discoveries and new developments to support an atomic-power program. We are spending large sums of money in developing power.

Mr. RABAUT. I suppose that is true, but here we refer to a statement dated last year which threw the whole thing in a sort of tailspin, and they do not seem to jibe. That is my thought in the matter as a layman. It seems that it is not very clear. Certainly it is not clear to me. Here we are going on with the bonus business, but are concerned about the lack of milling capacity, and the supply of ore is good. It is a reward. That is all it is. It does not add up.

In one place we are pulling in our horns. In the other place we are shoving them out.

Mr. JOHNSON. Our main problem is to maintain a level of production which is in line with the Commission's requirements, and there is also the long-range program of maintaining ore reserves for the future. Now there is a problem here, because with discoveries comes the desire for an immediate market. We certainly would not want to get in the position that we were in during 1948 when our reserves were depleted completely.

Mr. RABAUT. It is also advantageous to an agency to have a committee involved.

Mr. FLOBERG. Mr. Chairman, I think we certainly have to cover our outstanding obligations. I think nobody will question that. I think it is probably correct that the Commission should take a look at the projection of this policy. We would still have the question of breach of faith on the part of the Commission as we have people acting in reliance on our offer.

I think the Commission is prepared to consider this subject.

Mr. BOLAND. Just to keep the question on this phase of it here, I would like to ask what happens when you do discover new deposits? Do you grant a bonus to those who go out and look for them? And then what happens to the discovery of these deposits?

Mr. JOHNSON. The bonus is not for the discovery of ore, but is an added factor in the price of the delivery of the first initial production from the mines. This helps the small operators who find mines in the remote areas. It assists them in the opening up of the mine, to determine whether they have a mineable deposit, and in making shipments which might be a long distance from an existing mill.

Mr. Boland. You said a moment ago this of course would create new markets. You are not interested in new markets now, because the domestic ore reserve is 75 million to 80 million tons, and is sufficient to take care of your needs now, and well into the next 10 years. All of us recognize the fact that there will be greater demand for it in the years to come and we will run out of it.

Why go ahead with the bonus plan now? I can see the necessity of paying those under the commitments we have, but to encourage anybody else to go into it at this time it seems to me is a waste of money.

Mr. Johnson. First, we are not making any new commitments under the bonus program. That program was put out in the Federal Register and extends to March 31, 1960.

Mr. Boland. All you need is money to live up to your agreements with those with whom you have already made commitments, is that true? You need nothing beyond that?

Mr. Johnson. The program covers new production from new mining properties, either existing today or which may be found between now and March 31, 1960. That is the outstanding commitment.

Mr. Boland. There are commitments for any ore which may be found between now and 1960?

Mr. Johnson. That is right.

Mr. Boland. The hard-and-fast commitments to people who are looking for these ores?

Mr. Johnson. Yes, sir.

Mr. Rabaut. I am relying on a review of this by the agency.

Mr. Jensen. May I interject right there, Mr. Chairman?

Mr. Rabaut. Go ahead.

Mr. Jensen. Did I understand the Commissioners to say they were going to take another look at this matter and do I understand that after taking another look you might change your mind on the so-called bonus commitments which run to March 31, 1960?

Are you in a position, if you decide that these contracts are not necessary for this program, to revise your program?

Mr. Floberg. We certainly must cover any certified obligations we have, Mr. Jensen. We also have to consider any question of the rights of people who have acted in reliance on this representation. We do not want to be accused of breach of faith by those people.

We are prepared to take a look at it and see just how much flexibility we might have in this case, and what the desirable policy will be. If there is room for a change and if it is wise to change, the Commission is prepared to consider that.

UNOBLIGATED BALANCES

Mr. Rabaut. How much of your unobligated balance estimated for this year comes from this item? Put into the record a tabulation showing estimates and unobligated balances in this program for each of the last 5 years.

(The information requested follows:)

Comparison of actual costs to congressional estimates for the raw materials program for the last 5 fiscal years

Fiscal years	Actual cost	Congressional submission
1958	[1] $599,000,000	$599,000,000
1957	397,836,000	407,763,000
1956	281,046,000	318,402,000

[1] Current estimate.

Data for fiscal years 1954 and 1955 is classified and will be furnished separately. However, the costs were below the estimates as follows:

1955	$14,139,000
1954	6,220,000

RESOURCES EVALUATION

Mr. RABAUT. Will any of the $2,100,000 budgeted for resources evaluation be transferred to the Geological Survey?

Mr. MCCARTHY. No, sir. The amount shown as $2,100,000 is net of the comparability transfer to the Geological Survey. This is the amount the Commission would cost to carry on its own program.

Mr. RABAUT. Please briefly explain this program and tell us why it should not all be done by the Geological Survey.

Mr. MCCARTHY. I think Mr. Johnson can talk about that.

Mr. RABAUT. All right, Mr. Johnson.

Mr. JOHNSON. The resources evaluation program is carried out by our field staff in the various mining districts. That program is designed to keep the Commission fully informed on the developed ore reserves available for production, on the operations of the mines and the mills, on markets for independent ores as compared with milling ores. It developed the type of information required for the April 2 report.

We have to keep a continual review of the operations in the various districts supplying the Commission with ore. The Geological Survey has never performed this type of work. The Geological Survey, in its operations for us under contract mainly did its traditional type of work; that is, long-range resource studies and long-range geological work. During the period they were working for us, one of the problems was that our job was too much of a "rock in the box" program from their standpoint.

There has been a change in the type of program so that there is no longer a need for the Government to do physical exploration, but to do the kind of work designed to bring out immediate production. The Survey's work in the field, therefore, will be of the type it traditionally does in the lead, zinc, and other minerals; that is, broad surveys and long-range studies. It is more related, you might say, to basic research in science than it is to the development of practical operating data.

Mr. RABAUT. In this particular area, what does the Geological Survey do and how many people are employed? I see a figure here of $1,750,000.

Mr. JOHNSON. That was in the past. We have no program in 1959 with the Survey.

Mr. RABAUT. This is in the justifications on page 15.

Mr. JOHNSON. The $1,750,000 is for the resource evaluation engineering work performed by the Commission. This does not include any program for the United States Geological Survey.

Mr. RABAUT. How many people are involved in that figure?

Mr. JOHNSON. In our resources evaluation, there will be approximately 153 people in 1959.

Mr. RABAUT. Is that entire sum dedicated to that payroll?

Mr. JOHNSON. That and to field expenses.

Mr. RABAUT. How is that broken down, that $1,750,000?

Mr. JOHNSON. I can furnish that for the record. We have field people located in the various producing areas of the United States.

Mr. RABAUT. To the number that you said?

Mr. JOHNSON. To the number that I said; yes, sir.

Mr. RABAUT. What else is in there besides the salaries?

Mr. MCCARTHY. There is salary included in that sum. There is also included their travel, other objects of expense, maintenance of vehicles, and other charges.

Mr. RABAUT. Are there any extraordinary items or objects of expense?

Mr. MCCARTHY. Not that I know of.

Mr. RABAUT. You have travel and pay?

Mr. MCCARTHY. It includes both travel and pay.

Mr. RABAUT. How much would the travel and pay be, and what would be left after that?

Mr. MCCARTHY. I think the travel and the pay would be the greater part of the sum.

Mr. RABAUT. I imagine it would be, but I am trying to find out.

Mr. JOHNSON. That is correct, sir. There is also the maintenance of vehicles. I think that covers practically all of it. There are other costs for stationery, stenographic help, and expenses of that kind.

(The information requested follows:)

Resource evaluation—Domestic costs, fiscal year 1959

Further breakdown of costs for the fiscal year 1959 of the resource evaluation—domestic costs:

Salaries	$1,054,000
Travel costs	158,000
Equipment maintenance, services and supplies	417,000
Other costs, analytical services, retirement contributions, etc	121,000
Total cost	1,750,000

Mr. RABAUT. I interrupted you there by talking about the salaries. What does the Geological Survey actually do now?

Mr. JOHNSON. The Geological Survey no longer is a contractor for the Commission. It is my understanding that the Survey has come to the Congress with a program, as part of its own operations, which will include a considerable part of the type of work that it was doing for us to the end of the contract period, that is, for long-range scientific studies, including geological mapping of uranium resources, and uranium mineralogy. It is the type of work which is comparable, we might say, to basic research in science as opposed to operating, engineering data.

We are operators and we are not in on the long-range exploration.

Mr. RABAUT. Are they making this former expense of yours a part of their budget? Are there any deductions here for it, then, the amount they have put into the other budget?

I see you do not make the transfer.

Mr. JOHNSON. No, sir. Not only have we removed from our budget the total amount paid to the Survey under the contract, but our own activities have gone down. The reorganization which has taken place has had an important effect on our overall raw materials personnel. For example, at the high point we had about 620 raw materials personnel. That is now down, including resource evaluation and all other activities, to about 173.

For contractor personnel, including the USGS, at a high we were up to 1,396. It is now down to about 400.

Mr. RABAUT. I understand it now, the transfer. Before, you had them do certain functions for you and now they are doing it themselves.

Mr. JOHNSON. That is right. But we have not added to our own. We have cut our own, as well.

Mr. JENSEN. The Geological Survey, as you know, is under the Interior Department, and as such the Interior Subcommittee on Appropriations initiates appropriations for the Geological Survey.

In this year's bill there is a million dollars for the Geological Survey to take the place of the money we appropriated last year to the Atomic Energy Commission which was in turn transferred to the Geological Survey to do this work we are talking about.

Mr. RABAUT. The gentleman from Iowa is absolutely correct.

VANADIUM PROCUREMENT

Last year we discussed your purchase of vanadium, which is now in excess of stockpile requirements. Why cannot your uranium contracts be amended now to drop the liability for purchase of vanadium?

Mr. JOHNSON. We have been through contract negotiations. We have greatly reduced our vanadium liability and will be out of it completely by 1962. We do have an ore-buying schedule which has been in effect from the start of the program and which will run to 1962, and on which we have a liability to pay for the vanadium content of the ores as well as uranium.

For example, one contract recently expired, and our purchase liability on vanadium under that contract was eliminated and we buy the uranium produced on a byproduct basis.

So, as fast as we can, we are endeavoring to eliminate the vanadium commitment, but we still have some commitments which will run to 1962.

Mr. RABAUT. All through the Government from time to time we have amendment of contracts, and I should think probably there would be those who will be glad to be of some service to the Government when they see what the situation is, and they probably would cooperate with you in amending the contracts.

Mr. JOHNSON. We have been moving, I think, to the fullest extent possible, Mr. Chairman, and we have made very substantial reductions in our commitments.

Mr. Rabaut. Who have you approached about amending existing contracts which have not expired, and what were the results? I am speaking of vanadium now.

You may place the answer in the record.

(The information requested follows:)

Additional Information Requested, Fiscal Year 1959 Appropriations Hearings

VANADIUM PENTOXIDE COMMITMENTS

Since notification that the national stockpile goal for vanadium pentoxide had been reached, AEC has attempted to reduce its vanadium commitments as far as possible consistent with its obligation under its published ore-buying circular (Circular 5, revised) to provide a market for uranium-vanadium carnotite-type ores. When the domestic uranium program was initiated, carnotite-type ores were the only known sources of domestic uranium and to obtain maximum production it was necessary to provide a market for the vanadium that might be in excess of commercial demand.

As of June 1, 1956, the following contracts covering the purchase of uranium concentrates contained provisions for purchase of vanadium pentoxide:

Union Carbide Nuclear Co., Rifle: Contract AT(49–1)–529.
Union Carbide Nuclear Co., Uravan: Contract AT(05–1)–36.
Vanadium Corporation of America, Durango: Contract AT(49–1)–305.
Vanadium Corporation of America, Naturita: Contract AT(30–1)–GEN–121.
Climax Uranium Co.: Contract AT(49–1)–526.
Kerr-McGee Oil Industries, Inc.: Contract AT(05–1)–230.

As a result of contract negotiations involving extensions or modifications to existing contracts, AEC's contingent liability to purchase vanadium pentoxide has been reduced, new contracts contain no vanadium purchase provisions. The present position with respect to the contracts listed above is as follows:

Union Carbide Nuclear Co.

The obligation to purchase vanadium pentoxide from the company's mill at Rifle, Colo., has been eliminated.

The contingent liability for purchase of vanadium pentoxide from the company's mill at Uravan, Colo., has been reduced from an estimated 630,000 pounds per month to a maximum of 210,000 pounds per month, with no liability under certain operating conditions.

Vanadium Corporation of America

Upon expiration of the two above-mentioned contracts with this company, a new contract was negotiated covering expanded milling operations at the Durango plant. The Naturita plant was closed February 1, 1958. The new Durango contract, which becomes effective July 1, 1958, involves no purchase of vanadium pentoxide by the AEC.

Climax Uranium Co.

The contract with this company for production from its mill at Grand Junction, Colo., terminates on October 1, 1960. In the absence of a commercial market for vanadium pentoxide, it would not be possible for the company to continue operations at the existing price for uranium concentrate unless the AEC provided a market for the vanadium contained in the ore processed. In the event of negotiation for an extension of the contract beyond October 1, 1960, serious consideration will be given to the elimination of the vanadium commitment.

Kerr-McGee Oil Industries, Inc.

This company's mill at Shiprock, N. Mex., processes uranium-vanadium ores produced on the Navajo Indian Reservation and the company is required to pay for the vanadium content of the ores meeting certain specifications. The AEC contract for purchase of uranium concentrate from this mill now includes only reimbursement for the vanadium content of certain ores. Instead of producing commercial grade vanadium pentoxide, the vanadium contained in the ores remains in the mill tailings which become the property of AEC. This procedure results in lower current costs to AEC as compared with production

and stockpiling of vanadium pentoxide. The tailings are available for future reprocessing to recover vanadium.

AEC-owned and operated mill at Monticello, Utah

The AEC Monticello mill no longer produces vanadium pentoxide. However, payment is made for the vanadium content of ores meeting the specifications set forth in Circular 5 purchased at the Monticello buying station. Such ores may be sold at a later date to mills which recover vanadium for sale on the commercial market or the ores may be treated at Monticello and the vanadium tailings stored for future processing.

Miscellaneous

None of the other AEC contracts for purchase of domestic uranium concentrate with the exception of one, involves a liability for payments for vanadium.

The contract still having a commitment for vanadium in tailings is with Uranium Reduction Co. It is expected that this obligation will be eliminated during negotiations which are currently being held.

AEC commitments for purchase of vanadium under the current domestic ore buying circular expires March 31, 1962.

Mr. RABAUT. Are there any general questions on raw materials?

URANIUM PROCUREMENT

Mr. EVINS. I have a few, Mr. Chairman.

Mr. RABAUT. All right, Mr. Evins.

Mr. EVINS. Mr. Johnson, are you making purchases of raw materials to supply the Commission's needs, or are you making purchases to fill the contracts with our foreign suppliers and also domestic sources?

Mr. JOHNSON. The purchases are geared to the Commission's requirements. The Commission established, as I mentioned earlier, a procurement goal 2 years ago. Our purchases fall within that goal.

As a matter of fact, projected requirements from now through 1966 are higher than our uranium commitments today. However, requirements can change. We are no longer in a position where we have to find new sources to expand production, so that the need for making additional long-range commitments is not as great as it was earlier.

Actually our long-range projected requirements are today in excess of the amount we have under commitment.

Mr. EVINS. Looking at your figures alone on the procurement of source material, $391 million in 1957, it jumped to $591 million in 1958. That is a $200 million jump. And in 1959, it is $677 million. That is almost a 45- or 50-percent increase.

Why at this time is this large increase in raw materials necessary? I thought we had a pretty big stockpile of atomic bombs built.

Mr. JOHNSON. I cannot speak to that, sir.

Dr. LIBBY. May I interrupt?

You see, Mr. Johnson just buys the uranium the Commission tells him it needs. So I think the Commission should answer the question, Mr. Evins.

Mr. EVINS. Fine.

Dr. LIBBY. We need uranium to make the material for the bombs which the Department of Defense requires.

Mr. EVINS. Mr. Commissioner, do not misunderstand me. I for one, as an individual, and I am sure the committee as a whole, want the Commission to have all the raw materials that are needed, but we are inquiring as to why almost a doubling of increase in cost in the past 2 years.

Dr. LIBBY. This has been planned since the time of the expansion program. You will remember that in 1952 or 1953, the Congress

voted funds for a large expansion to the program for the production of uranium 235 and plutonium. The uranium 235 part of this included the Portsmouth installation, at a cost of something over $1 billion, and expansion at Paducah.

The use in uranium consumption is to be associated with this thing coming into full swing. That is really what is behind this rise, Mr. Evins.

Mr. EVINS. Of course, there is a good deal of pressure on the Commission, both from our foreign sources and domestic sources, to make new purchases, is there not?

Dr. LIBBY. Yes, sir; but we are going to use this ore and use it to good advantage.

FOREIGN COMMITMENTS

Mr. EVINS. When will our foreign commitments begin to taper off a bit?

Dr. LIBBY. Right now, according to my understanding of the situation, our requirement for the feeding of these plants will level off. Of course, one has a certain leeway in policy because you can strip the uranium to a somewhat lower concentration of 235, so a value judgment as to just how much you feed them is involved. But we are in the right general range of volume for the optimum feeding right now, Mr. Evins.

Mr. EVINS. Will we be in a position to support our domestic mines more in the next years ahead and have a tapering off of the African contracts?

Dr. LIBBY. Yes, sir.

Some of these contracts, though, run into the 1960's, Mr. Evins.

Mr. EVINS. You state here that 84 percent of our ores come from the United States and Canada. You tie those together. How much of the 84 percent comes from the United States and how much from Canada?

Mr. JOHNSON. In 1959, it will be about 50–50 between the United States and Canada.

Mr. EVINS. How much has it been in the past, say, 3 or 4 years ago, percentagewise?

Mr. JOHNSON. In the last 3 years, the United States production has been higher than Canada's. Both Canadian and the United States have been increasing.

Mr. EVINS. We understand about the production. I am talking about purchases.

Mr. FENTON. We have a lot of stuff in here which is confidential. Would that come under that?

Mr. BOLAND. It is all in the unclassified section of the worksheets.

Mr. MCCARTHY. Page 24 of the budget does give a breakdown by source for the 3 year period.

Mr. EVINS. I was just asking the gentleman, percentagewise, if he can tell us how much is coming from the United States and how much from Canada.

Mr. JOHNSON. About 50 percent for 1959; and in 1958 the United States production was slightly more than Canada. It was still about an even break.

Mr. EVINS. In other words, Mr. Johnson, the United States sales to the Commission are on the increase, and the other is slightly decreasing?

Mr. JOHNSON. The Canadian is on the increase and the United States is on the increase. The others have been static. The Canadian, in 1959, will reach a peak, and the domestic will continue upward somewhat.

Mr. EVINS. Mr. Johnson, you state on page 17 that Canada will supply directly to the United Kingdom. In turn, you have an agreement to sell to the United States by the United Kingdom. Tell us about that contract, how it goes through the middleman of the United Kingdom, they being the middleman.

Mr. JOHNSON. No. There is a misunderstanding. The United Kingdom does not sell to the United States. Originally, when our program was set up, all of the Canadian uranium was committed to the United States. About 2 or 2½ years ago, when the British program was expanding they wanted to purchase Canadian uranium.

Canada was in a position to expand its production to meet the uranium requirements. At the same time, we saw our domestic production on the rise. So, rather than have further expansion in Canada, we suggested that we would release material then under firm contracts to the Commission so that Canada could sell to the United Kingdom.

As a result of these actions by the Commission, the United Kingdom has now under firm contract Canadian uranium which formerly was under firm contract to the United States. We have, in this way, reduced our commitments to Canada, and Canada in turn has sold to the United Kingdom.

Mr. EVINS. I believe also the costs are being reduced; are they not?

Mr. JOHNSON. The Canadian prices have been relatively firm for the last several years.

Mr. EVINS. I thought I read somewhere you stated that the costs would be about 20 percent lower.

Mr. JOHNSON. Our domestic prices have been coming down under the new contracts.

DEVELOPMENT OF ATOMIC POWER

Mr. EVINS. You stated earlier that we are in a comfortable position for the next 10 years. When does the Commission expect to begin to develop commercial atomic power?

Mr. FLOBERG. The prospect of economical commercial atomic power varies depending on the area you are talking about. The Commission has set as an objective, with the concurrence of the Joint Committee on Atomic Energy, the development of commercial economical atomic power in foreign areas within 5 years, and in domestic areas within 10 years.

Now this does not mean all domestic areas. For example, the Bonneville Power area, which was referred to by one of the members of the committee yesterday, has an extremely cheap power supply, and nuclear power may never be competitive there.

The same may be said of the Ohio Valley, where coal is extremely cheap.

At the other end of the spectrum, in this country you will find areas like Florida, the northern part of the Middle West, or New England, where conventional fuels are more expensive. So, timewise, economical nuclear power will be competitive much earlier in those areas.

The position of the Commission is that within the time scales which I have described to you, utilities or power companies, or public power

authorities will be able to make a decision on whether to install a new plant to be fueled by conventional fuels or to be fueled by nuclear fuels on the basis of economics alone or preference alone.

Mr. EVINS. In other words, the Commission is waiting on the decisions of the private utilities before they make any firm decisions as to when they are going to move in and start producing atomic commercial power?

Mr. FLOBERG. No, that is not correct. If I gave that impression, that is wrong.

Mr. EVINS. You said you were going to wait on their decisions in particular areas.

Mr. FLOBERG. No. I did not mean that at all. What I tried to convey was that the Commission is going to press forward on the development of the technology so that people who make electricity will, within the time scales I have described to you, be able to make their own decisions as to whether they choose to have a nuclear powerplant or conventional powerplant in the area where they are operating.

Our responsibility is to develop this technology to the point where consumers—and by "consumers" I mean, in this case, the producers of electricity—can have the technology available to them so that they can make the decision to install a nuclear powerplant.

Mr. EVINS. Now, Mr. Commissioner, you have been developing this technology for several years, and for the past several years on the committee we have been talking about when is the Commission going to develop commercial power.

I rather get the impression that you are in a comfortable position, we have an excess of raw materials, but yet no firm decisions have been made.

Mr. FLOBERG. The development of nuclear power for all practical purposes began with the passage of the Atomic Energy Act of 1954. So it is really only a 4-year-old project up to now. Now this is one of the most ambitious technical and scientific undertakings that anybody has ever assumed, and I believe we have made tremendous progress in the past 4 years. We would, however, be just talking through our hats if we said that we had all the problems solved by now. We have plenty more to solve.

That is what our objective is. We are pressing just as hard as we know how to solve it.

Mr. EVINS. Mr. Commissioner, I want to commend you for your progress in the Commission. I want to charge you for further progress, if I may, and give you further encouragement in that regard.

URANIUM PROCUREMENT FROM CANADA

Mr. RABAUT. Mr. Boland.

Mr. BOLAND. This concerns information on page 24, the green sheet, so I presume this is confidential, so that will be off the record.

(Discussion off the record.)

Mr. BOLAND. When were the firm contracts with Canada entered into?

Mr. JOHNSON. The commitments with Canada were made some years ago. The commitments in 1955 with the Canadian Government were limited. In August of 1955, the Minister in a message to

the Parliament advised that there would be no more uranium contracts made by the Canadian Government after March 31, 1956, and only those contracts would be made prior to that time where the companies could come in with adequate proposals.

During the earlier period of our development of uranium resources, we had made an arrangement with Canada under which Canada undertook, at our request, the same type of program we had in the United States to stimulate the discovery and development of uranium production. Under that arrangement, Canada agreed that all of the uranium found in Canada, except for such quantities as might be required for the Canadian program, would be available to the United States, and would be sold to the United States, and we undertook to purchase it, subject to a limitation whenever the production got to certain heights.

So steps were taken in 1955 to limit the Canadian contracts, but the final contracts with the companies were, in a number of cases, negotiated after March 31, 1956, on the proposal submitted.

So that the deliveries we are receiving from Canada in 1959 are covered by firm contracts. These contracts have been reduced, however, by our release of certain quantities of materials which are now being sold by Canada to the United Kingdom.

Mr. BOLAND. What is the total amount of the Canadian reserves?

Mr. JOHNSON. The Canadian reserves are approximately 400,000 tons in terms of uranium oxide. Our reserves of 80 million tons of ore would be around 150,000 tons of uranium oxide.

Mr. BOLAND. The 75 million to 80 million tons is the domestic reserve?

Mr. JOHNSON. That is the reserve of ore. In our ore we recover about 4 to 5 pounds of uranium per ton of ore. So that there is around 150,000 tons of recoverable uranium oxide in our reserves. The Canadian reserves are between 300,000 and 400,000. The Canadian reserves are higher.

Mr. BOLAND. Tons?

Mr. JOHNSON. That is tons of uranium oxide. Their reserves in tons of ore are much higher than ours because it takes 2½ tons of average Canadian ore to equal 1 ton of average United States ore.

Mr. BOLAND. Why do we have to pay so much for the Canadian ore, then, as compared to our own?

Mr. JOHNSON. The reason for higher cost of Canadian uranium is the fact I mentioned just now, that 2½ tons of Canadian ore must be mined and milled to produce the same amount of uranium oxide as 1 ton of domestic ore.

Mr. BOLAND. After our commitments expire—when is that, in 1962?

Mr. JOHNSON. Yes.

Mr. BOLAND. I do not presume that we will purchase then as much as we are purchasing now.

Mr. JOHNSON. It will depend on the Commission's requirements and policy.

Mr. BOLAND. We ought not to do it at this cost.

Mr. JOHNSON. We have options to purchase Canadian material after 1962 at $8 per pound of U–308.

Mr. BOLAND. These are all fixed-cost contracts?

Mr. JOHNSON. That is right.

Mr. BOLAND. That is all, Mr. Chairman. Thank you.

Mr. RABAUT. Mr. Jensen.

Mr. JENSEN. What is the import duty on uranium from foreign countries, and from Canada?

Mr. JOHNSON. There is no import duty.

Mr. JENSEN. I was quite sure that would be the answer, because it is a strategic material.

Is there any raw material you import which does have a duty?

Mr. JOHNSON. Not under AEC contracts. As a matter of fact, our imports are almost entirely uranium.

Mr. JENSEN. Will you insert a list of the raw materials which you purchase, for the record?

Dr. LIBBY. We certainly can. I believe that has been placed in the record, except for certain classified material, when the justification pages were inserted.

POWER REACTORS IN 1959 BUDGET

Mr. JENSEN. Now, Mr. Floberg stated a few minutes ago that there were certain areas where possibly in 10 years atomic energy power, or electric power produced by atomic energy would be economically feasible and competitive with conventional power.

You pointed out the areas where the cost of producing electric power was higher than in other areas.

In this budget you have requested atomic power reactors in five areas. Are those atomic power reactors located in the high electric power cost areas?

Mr. FLOBERG. The only power reactor the Commission would build under this budget which has been submitted to you is the gas-cooled reactor. I believe that may be the only one, unless there are some reactor experiments.

Now, we have requested funds for the cooperative program, and that might be considered responsive to your question, although it is a little outside of it. These, generally speaking, are also projects which are in the high-cost power areas. I cannot think of an exception to that, but I will ask Mr. Davis to confirm that.

Mr. DAVIS. I believe that is correct. I did not hear the initial question.

Mr. FLOBERG. There is one in Ohio which might be considered an exception to that statement.

RAW MATERIALS PROCURED

Mr. RABAUT. We will adjourn for a few minutes in order to go up to vote.

Dr. Fenton will go ahead while we are gone.

Mr. FENTON. Yes.

Mr. Chairman, is the purchase of most of this raw material for your power program?

Mr. FLOBERG. The purchase of most of the raw materials is for the weapons program. Actually, the power program takes a relatively small amount of uranium. Even a full-fledged power program does not take a tremendous amount.

Mr. FENTON. I might ask you what you mean by "power program," then. There is a certain amount of power required for your weapons program.

Mr. FLOBERG. Not nuclear power. The uranium ore we buy and then process through the separation plants, and so forth, is destined principally for weapons. It becomes a component of the weapons.

A small amount of the uranium which has been similarly processed will wind up as the fuel in reactors, but that is a relatively small amount and will always be a relatively small amount, because power reactors do not consume a tremendous volume of uranium.

Mr. FENTON. Are the raw materials you buy uranium, thorium, and vanadium?

Mr. FLOBERG. Yes, sir. The uranium is by all odds the preponderance. Vanadium is a byproduct of the uranium purchases.

VANADIUM PURCHASES

Mr. FENTON. You have a vanadium pentoxide and you have another form of vanadium. What is the difference?

Mr. FLOBERG. I will ask Mr. Johnson to give you the details on that.

Mr. JOHNSON. The only product the Commission purchases as a byproduct, unless it is buying uranium-vanadium ores, is in the form of fused vanadium oxide, which is a commercial product. It is also called vanadium pentoxide, and is one and the same thing.

That, in turn, in commerce is made into ferrovanadium, which moves into the steel industry. The product that was purchased by the GSA for the stockpile program was fused vanadium oxide or vanadium pentoxide, and for a number of years we supplied this material to the stockpile.

Mr. FENTON. How do you purchase that? Do you purchase that through a contractor, or do we buy the ore and have it milled, or what do we do with it?

Mr. JOHNSON. The milling companies buy the ore which contains both vanadium and uranium. At the start of our program, in the West, the only uranium ores known in the United States that could be mined on any commercial scale were these uranium-vanadium ores. These ores had been sold in the past for vanadium alone when there was no market for uranium.

So in our program, we established a price for the uranium and the vanadium in the ore. When the mills bought the ore from the private producers, they paid for the uranium and the vanadium, and the uranium was delivered to the Commission under its contract. The company also had an option of delivering excess production of vanadium, to the Commission at a price of about $1 a pound, which was the price which GSA had been paying.

Mr. FENTON. Why do we have to pay for vanadium in the contract?

Mr. JOHNSON. At the start of the program and on the basis on which the original contracts were made, you could not separate the vanadium from the uranium in the ores. It was one and the same. So when the product went to the mills, 2 products came out, 1 vanadium and 1 uranium. We needed all the uranium we could get, so rather than have the vanadium production go up and down affecting the vanadium market, we agreed to purchase the surplus vanadium.

Mr. FENTON. I take it from the colloquy between you people and Mr. Boland that our domestic ores are richer in uranium content than Canada's.

Mr. JOHNSON. That is correct, sir.

Mr. FENTON. How do our ores compare with uranium ores of other countries?

Mr. JOHNSON. Our ores are richer than any ores produced in quantity in any of the other countries today, that is, any of the countries of the Western World. I have no information regarding the Russian situation. This was not the case in the early days when our major supply was the Belgian Congo, which was a very rich ore.

RELATIONSHIP OF ATOMIC ENERGY COMMISSION AND GEOLOGICAL SURVEY WORK

Mr. FENTON. Something was said a while ago about the part that the Geological Survey plays in this program. Just what does the Geological Survey do? They do not go out and explore, or anything like that?

Mr. JOHNSON. You mean in line with their regular traditional work? They make a geological map of the United States covering area by area. They study the mineral deposits from a scientific standpoint to determine the origin, how the material got where it is, methods of pointing out favorable areas for development, and generally making long-range appraisals of our mineral resources of all varieties.

I think that is traditionally the Geological Survey's function.

Mr. FENTON. Just last week we had the Geological Survey before our Interior Subcommittee. A good many Americans thought that the Geological Survey went out and located where these ores were.

I have come to the conclusion that their function is mainly that of mapping.

Mr. JOHNSON. Their work includes mapping and scientific studies of geology and of mineral deposits which form the basis for private exploration and knowledge of mineral deposits.

The practical mining industry has a very high regard for the work the Survey has done, and its usefulness in maintaining our mineral production.

Mr. FENTON. I think it is one of the finest organizations in the Government, myself, but I just bring that out that they do not do any actual exploration for minerals.

Mr. JOHNSON. They did work for us at our request under a contract during a period when we were trying by every means possible to develop additional uranium production.

PROCUREMENT FROM CANADA

Mr. FENTON. As you know, we certainly are going in the red every year. On the other hand, Canada has been getting on her feet and has solved her budget program and her dollar is worth more than ours.

Your justifications show that we have been paying Canada a considerable amount for uranium. In 1959 it was estimated it would be $280,568,000; in 1958, it is $218,251,000. That amounts to a considerable sum of money from the United States.

I realize we have to have the ore. I think we have been pretty liberal with some countries in our purchasing. How long do these contracts have to go?

Mr. JOHNSON. Most of our contracts with Canada will expire on March 31, 1962. We have only a small contractual commitment from March 31, 1962, until March 31, 1963. The bulk of the Canadian uranium that is under contract for that last year is now under a firm contract to the United Kingdom.

Mr. FENTON. Do we have any recapture clauses in the contract?

Mr. JOHNSON. No, sir.

Mr. FENTON. Any renegotiation?

Mr. JOHNSON. No.

Mr. FENTON. The procurement of source materials appears to be based on existing contracts or open-end commitment to buy all source materials offered, rather than a programed need for such material. What is our present stockpile of such material? How does the budget programed procurement for 1959 compare with the program for use of material in fiscal 1959?

Mr. JOHNSON. We have no stockpile at the present time of uranium concentrate. All of the material purchased by the Commission moves directly through the production chain into fissionable material, and then into the military program together with whatever goes into the power program. That has been the situation ever since the Commission's program got under way.

There has generally been a pressure to move material as fast as possible. There is always, of course, an in-process or in-transit inventory of material being moved, but there is no stockpile of uranium concentrate.

Mr. FENTON. That is all, Mr. Chairman.

SPECIAL NUCLEAR MATERIALS

Mr. RABAUT. Now the committee will take up the special nuclear materials. There is a tab for that in the book. We will stay with that subject. Try to keep the answers as close as possible to the questions.

We will start off by inserting pages 26 and 27 in the record.

(The pages referred to follow:)

SPECIAL NUCLEAR MATERIALS PROGRAM—OPERATING COSTS

Program statement

Estimate fiscal year 1959	$580, 400, 000
Estimate fiscal year 1958	569, 800, 000
Increase	10, 600, 000

Summary of estimates by category

Category	Actual fiscal year 1957	Estimate fiscal year 1958	Estimate fiscal year 1959
1. Procurement and production	$547, 613, 930	$532, 838, 000	$543, 241, 000
2. Process development	33, 988, 696	36, 962, 000	37, 159, 000
Total, special nuclear materials program	581, 602, 626	569, 800, 000	580, 400, 000

JUSTIFICATION OF CATEGORIES

1. Procurement and production, $543,241,000

These funds provide for the operation of Government facilities for the production of special nuclear and other special materials required for use in weapons manufacture, research and development and in the industrial programs for the peacetime applications of atomic energy. The major units of this production complex are located at Oak Ridge, Tenn.; Paducah, Ky.; Portsmouth, Ohio; Hanford, Wash.; Savannah River, S. C.; Fernald, Ohio; and Weldon Spring, Mo. Although there is an increase in materials to be processed, the increase in cost is moderate since unit costs of processing have declined in most of the steps in the production chain.

2. Process development, $37,159,000

These funds provide for improvement of processes and equipment used in producing and processing uranium feed materials, enriched U–235, plutonium and other special products. The development program activities at each of the production sites are undertaken as appropriate to assure attainment of production levels required to meet current AEC commitments, to provide technical assistance necessary to improve the efficiency and continuity of operations and to incorporate technological improvements in existing plants to increase safety of operation as well as reduce costs.

Additional information of a classified nature is presented on the following pages 28 through 39.

Mr. RABAUT. The 1958 appropriation was $569,850,000, and the request for 1959 is $580,400,000, an increase of $10,600,000.

UNOBLIGATED BALANCES

What is your estimated unobligated balance in this program for 1958? Put that in the record.

Mr. FLOBERG. Yes, sir.

Mr. RABAUT. Will you supply that for the record?

Also give us a comparison between the actual and the estimate for the last 5 years.

Mr. FLOBERG. Yes, sir.

(The information requested follows:)

ACTUAL COSTS—SPECIAL NUCLEAR MATERIALS PROGRAM

The revised estimate of fiscal year 1958 special nuclear material costs is $568,449,000. Costs through May 1958, adjusted for a special materials consumed totaled $516,734,000, leaving a balance of $51,715,000 to be costed in June. Actual costs for the month of May were $49,147,000.

Comparison of actual costs to congressional estimates for the special nuclear materials program for the last 5 fiscal years

Fiscal year	Actual cost	Congressional submission
1958	[1] $568,449,000	$594,300,000
1957	581,600,000	604,800,000
1956	553,100,000	629,100,000

[1] Estimated.

Data for fiscal years 1954 and 1955 is classified and will be furnished separately. However, the costs were below the estimates as follows:

1955	$99,100,000
1954	118,000,000

Mr. RABAUT. Your justifications contain a reference to a new privately owned plant for conversion of uranium concentrates to gaseous hexafluoride. Tell us about this and how it affects cost in your nuclear materials program.

Mr. FLOBERG. I will ask Mr. Bloch to respond to that question.

Mr. RABAUT. Mr. Bloch.

Mr. BLOCH. As you may recall, Mr. Chairman, several years ago we faced the need for additional capacity for producing our feed materials. We secured an appropriation of $22 million at that time, which included a proviso under which we could attempt to have industry build a plant to meet this need or, if they would not, the $22 million would be available for construction of a Government plant.

We asked for competitive proposals. We secured, as I recall, some 8 or 10 proposals, and we made the award on the basis of the lowest bid. The resulting contract was a 5-year contract.

This contract provides for processing uranium concentrate into finished uranium hexafluoride. The contract price is $1.20 a pound. The plant is expected to start operations near the end of the fiscal year 1959, and the budget includes some $3.8 million, I believe, for deliveries under this contract.

Mr. RABAUT. Now, in any terms you choose, compare the cost of the end product from this plant with your own cost. Use some unit cost that we can understand.

(Discussion off the record.)

Mr. RABAUT. Is there anything in your contract to take care of lowered production costs? Will the Government get some benefit?

Mr. BLOCH. There is an option in the contract that after the initial 5-year period, we can secure production for a 5-year period beyond that at a cost which would be negotiated based on actual experience, and which would exclude any plant amortization. In the initial 5-year contract, we are writing off the plant amortization.

Mr. RABAUT. The total plant?

Mr. BLOCH. Yes, sir. We do have the option beyond that, and during the option period the cost would be significantly lower.

Mr. RABAUT. What was the price of that plant?

Mr. BLOCH. The proposal on which——

Mr. RABAUT. I do not care about the proposal. I want to know what the cost of the plant was.

Mr. BLOCH. I do not know the actual cost of the plant.

Mr. RABAUT. All right. Put in the record what the cost of the plant was, and who the contract was with.

Mr. BLOCH. All right, sir.

Mr. RABAUT. And if that total price of the plant is amortized in the 5 years, or if there is a set price that is amortized.

Mr. BLOCH. All we are committed to is amortization to the extent of $11 million, no matter what the actual cost of the plant was.

Mr. RABAUT. After that is amortized at $11 million in the first 5 years, then you should have a corresponding reduction, some sort of reduction in the cost of this material from that period on; is that right?

Mr. BLOCH. We do, sir, and we pay no amortization, even though the actual cost of the plant might have exceeded the $11 million, we would not pay that in the succeeding 5-year period.

Mr. RABAUT. Are there any commitments in this option with respect to price after the 5-year period?

Mr. BLOCH. The specific commitment is that there would be no amortization, regardless of what the actual cost of the plant was.

Mr. RABAUT. That is not the answer I want. Is there any commitment to a price after the 5-year period, after the amortization?

Mr. BLOCH. I will have to check that and supply that for the record.

Mr. RABAUT. Supply that for the record. That is important.

(The information requested follows:)

CONTRACTOR: ALLIED CHEMICAL CORP.

PRICE

Average base unit price for UF_6 over the 5-year period, adjusted for the change in value of concentrate, is $1.18 per pound contained uranium.

OPTION PRICE

During the 5-year period following the term of the contract the AEC has the option to acquire product at a price to be agreed upon which price shall not include any amount representing amortization of and interest charges on facilities cost included in the total amount actually paid by the AEC for the original contract quantities delivered (estimated at $0.38 for each pound of contained uranium).

PLANTS SHUT DOWN

Mr. RABAUT. There is reference in the justification to the fact that fewer processing facilities will be in operation next year. What is this about?

Mr. BLOCH. During the past year, we have been able to consolidate production, through improved performance, in our existing plants, and as a result saved some money.

In the feed materials chain we have shut down the old St. Louis plant which was built during the war. We have made some reductions in the heavy water plant we are operating at Savannah River, and we have shut down a plant for the production of boron.

Mr. RABAUT. How much money did you save? You referred to the saving of money. The Appropriations Committee is always interested in a statement like that.

Mr. BLOCH. The shutdown of the old feed plant will save us about $2 million a year. The shutdown of the boron plant will save us about $1 million a year. The reduction in the heavy water plant at Savannah River will save us between $3.5 million and $4 million a year.

GAO REPORT ON OHIO VALLEY ELECTRIC CORPORATION CONTRACT

Mr. RABAUT. The Comptroller General in his December 1957 report suggests that the AEC is being charged by the Ohio Valley Electric Corp. for more transmission losses than actually are incurred in meeting AEC load requirements at Portsmouth. What is this about?

Mr. BLOCH. These involve calculating the line losses in delivering power to our plant. It is a combination of calculation and metering at various points.

Upon receipt of the Comptroller General's report, we and Ohio Valley Electric Co. made an intensive study of the problem. We

have secured the assistance of an outside firm, an expert in this field, to assist in the study.

This study indicates a recheck of the meters and the various meter constants to see if there is any bias, a check of all the various circuitry, and any recheck of the methods used in calculation.

As a result, in recent months the pluses or minuses associated with the difference between measured and delivered have been very minor. There has not been much fluctuation.

Mr. RABAUT. Does this have any effect on costs? Does it reduce them any?

Mr. BLOCH. It would to the extent that there was any bias. The possible bias indicated in the Comptroller General's report for the month which was covered in his report, in dollars, was probably on the order of $40,000. However, there have been other months where the bias has been the other way.

Mr. RABAUT. Suppose you estimate what the lowering of costs will be to the AEC per year as a result of this study.

Mr. BLOCH. I will have to put that in the record.

Mr. RABAUT. All right, just put it in the record.

Mr. BLOCH. In this kind of activity there are fluctuations, there are pluses and minuses.

Mr. RABAUT. All I want to know is, how does it end up at the end of 12 months.

(The information requested follows:)

OVEC STUDY

In September 1957, we advised GAO that additional studies were being undertaken by OVEC and an independent engineering firm to determine the causes for and minimize these "transaction gains" and "transaction losses." ("Transaction gains" and "transaction losses" refer to the differences between (*a*) kilowatt-hour losses within the system as a whole derived from meter readings, and (*b*) kilowatt-hour loses calculated by formula to arrive at the amount attributable to power furnished AEC. "Gains" is where (*b*) is greater than (*a*); "loss" is where (*a*) is greater than (*b*).) In recent months the gains and losses have been essentially balancing out as indicated below:

Month	Transaction, gain, mega-watt-hours	Transaction, loss, mega-watt-hours
November 1957		2,419.2
December		3,154.1
January 1958	202.4	
February	3,938.2	
March	3,086.1	
April		1,198.8
May		7.9
Total	7,226.7	6,780.0

On the basis of the energy costs at the OVEC stations, the cost of kilowatt-hours attributable to "gains" is approximately $14,000 and to "losses" $13,000, leaving a balance of $1,000 for the period.

Mr. RABAUT. It is also reported that the Ohio Valley transmission system is used to carry power not associated with AEC requirements at no cost to the users. It is suggested that if charges were made for this use of transmission facilities, the cost to AEC would be lower. What is being done about it?

Mr. BLOCH. We also looked into this. We have checked it, and we find that there is no scheduled transmission of power by any of the

OVEC group across the transmission lines. Since it is an interconnected system, some power can inadvertently flow through this line, but it is not scheduled for use by the companies.

Mr. RABAUT. Are you experiencing any cost in the AEC of power which might be erroneously charged to you?

Mr. BLOCH. No, sir. Mr. Chairman, this transmission line was built as part of the power supply to our Portsmouth plant. It was built to bring power from the systems of the OVEC companies in the earlier days, power from their systems to Portsmouth. This was when we were short on power and we were buying power from them.

In addition, these systems are required to back up the OVEC plants. Any time the generators in the main OVEC plant are down, they are required to supply power on an interim basis to maintain our load.

In addition, when the plants are operating, there is a certain amount of excess power which flows to the sponsoring companies, and that power goes out over these same lines.

With respect to the power that the sponsoring companies get under the contract, they pay for that power; they have to pay a proportionate share of the generating plants and the fuel and everything else.

Mr. RABAUT. How is it that this question arose, that the Ohio Valley transmission system is used to carry power in association with the AEC power requirements?

Mr. BLOCH. Apparently, the General Accounting Office felt that there might be some scheduled flow of power over these lines over and above the ones I have just referred to. We have looked into it, and we cannot find that there is any scheduled flow of load outside of the requirements for our project over these lines. Now, it is possible in an interconnected system that some energy would inadvertently flow through this line.

Mr. RABAUT. If there is any loss here, can it be corrected?

Mr. BLOCH. If there were any scheduled use of this line for purposes other than our project, we have the assurance of OVEC they would pay for it.

Mr. RABAUT. In his report he says:

> We agree with the AEC position in this matter, and do not question the need for the interconnection of the system. However, we believe that the determination should be made of the extent to which the OVEC transmission system is being used by the sponsoring companies for purposes other than supplying power to OVEC or taking power from OVEC, and whether the circumstances would warrant a charge to the sponsoring companies. Payment of such a charge would reduce OVEC's cost and, in turn, would reduce AEC's power bills under its open-end-cost-type contract with OVEC.

This is their charge.

Mr. BLOCH. Mr. Chairman, we can pursue this further. On the basis of the examination we have made, we cannot find that there is any regular or scheduled use of this line for these other purposes. But we can pursue it further.

Mr. RABAUT. All right. You pursue it further.

Are there any questions under special nuclear materials?

DESCRIPTION OF FEED AND SPECIAL NUCLEAR MATERIALS

Mr. JENSEN. What materials are included in the item "Feed materials"?

Mr. Bloch. Mr. Jensen, the feed-materials category covers the activities to take the uranium concentrates which are purchased by Mr. Johnson's Division, and refine them into purified products.

There are two main products. One is uranium metal, and the other is uranium hexafluoride.

The uranium metal is used for the production of plutonium in the Hanford and Savannah River reactors. The uranium hexafluoride is fed into our gaseous diffusion plants at Oak Ridge, Portsmouth, and Paducah, to produce enriched uranium 235.

It got the title "Feed Materials" essentially because it does provide purified feed to produce the fissionable material.

Mr. Jensen. I note your request for U–235 for fiscal year 1959, and your request for plutonium. What is the relationship between these two? You have answered it to some degree in the statement which you have made, but give the committee the definition of U–235, the definition of plutonium, and their relationship.

Dr. Libby. Maybe I should try on this one, Mr. Jensen.

U–235 and plutonium are both fissionable in that they will support a chain reaction and we can make atomic bombs out of them.

Now plutonium is different, in that it takes a smaller weight of plutonium to get a chain reaction to go than with uranium 235. They are also different in that the plutonium burns at a higher efficiency in a bomb under most conditions than does U–235.

So, for making bombs, in general plutonium is somewhat preferable, weight for weight and atom for atom. However, plutonium is poisonous and uranium 235 is not. The body tolerance for plutonium is one half of one millionth of a gram, and U–235 you can practically eat in any quantity. You would not want to because it does not taste particularly good but there is a big difference in the difficulty of handling and deployment.

Mr. Jensen. You say you could eat it, but what would it do to you after you ate it?

Dr. Libby. There would be no serious deleterious effects from it.

Mr. Jensen. There would be no radioactivity resulting?

Dr. Libby. It is very minor. That is the trouble with plutonium. It is intensely radioactive, and it also stays in your system to a certain degree. It goes into bones. Plutonium is kind of dangerous and mean to handle, but it is a very valuable thing for making bombs.

Mr. Jensen. Because of the fact that U–235 is not injurious to the human body, or slightly injurious, it is possible to use that in the practice of medicine. Is that why it is used, Dr. Dunham, because there is little, if any, aftereffects of radioactivity from an isotope which contains U–235?

Dr. Dunham. U–235 is not used in the practice of medicine, It is used in the laboratories for research.

Mr. Jensen. What is that again?

Dr. Dunham. I say it is not used in the practice of medicine. You do not give it to a patient as a treatment. It has no value as a drug.

Mr. Jensen. It is injected, is it not?

Dr. Dunham. Not U–235.

NATURE OF ISOTOPES

Mr. JENSEN. I am talking about isotopes.

Dr. DUNHAM. There are certain isotopes, yes, that are very definitely used.

Mr. JENSEN. Is there any U–235 in an isotope?

Dr. DUNHAM. U–235 is an isotope itself. It is only one of many hundreds of isotopes.

Mr. JENSEN. Are there as many kinds of isotopes as that?

Dr. DUNHAM. Yes, sir.

Dr. LIBBY. Something like 1,200 different kinds.

Mr. JENSEN. All right. Give us the definition of an isotope, then.

Dr. LIBBY. The atom consists of two parts, Mr. Jensen, a tiny little sun inside and the electrons that go around like the planets go around the sun. Now the isotopes are atoms which have different suns in them.

For example, the simplest atom is hydrogen having one planetary electron. There are three isotopes of hydrogen. There is ordinary hydrogen which you have in water, and the mass of its sun is 1. It is actually 1.6 times 10 to the minus 24th power grams, but 1 unit we call it.

Then there is heavy hydrogen which we use in making the hydrogen bomb, which has mass 2 in its sun, and, finally there is tritium, that has mass 3.

Yet every one of these 3 atoms has just 1 electron going around, and for that reason is hydrogen. You can make water out of any of them. You can have heavy water, ordinary light water, finally tritium water. These all taste the same, they look the same, and have very nearly the same properties, except the tritium is radioactive and the radiation will hurt you if large quantities are ingested.

These are isotopes. There are something over 100 different kinds of elements. That is, you have hydrogen, helium, and it goes on and up through uranium, plutonium, and so on, but there are 1,200 or more different kinds of isotopes for the reason that there are usually several isotopes per element. In the case of hydrogen, there are 3 and in the case of tin there are 16. Sixteen different kinds of tin atoms with each one having different little central nuclei or atomic suns.

So that is what isotopes mean. They are useful because of their nuclear properties. U–235 is $16 a gram, whereas ordinary uranium 238 is about $16 a pound, more than 450 times less valuable, entirely because of the difference in the U–235 nucleus as compared to the U–238 nucleus.

You cannot make a bomb from the U–238. It will not fission unless you supply it with very special energy neutrons. But U–235 and plutonium will both go with any neutron. That is where the great value lies.

There is one other isotope which has fissionable properties, and that is U–233, made from thorium. That is why thorium has some value as a raw material, because you can make U–233 from it by irradiating it in a reactor, just as you make plutonium at Hanford by putting ordinary U–238 in a reactor.

But there are only three of these materials from which you can make bombs—U–235, plutonium, and U–233. Some of these other

materials can be used together with these to give you more energy, but these are the three prime fissionable materials.

The relative numbers in here pose two considerations—our needs for particular kinds of bombs, and the costs of the two different manufacturing processes. That is, the diffusion plant is extremely different from the Hanford-Savannah River type of plant. So the costs per unit weight of U–235 and PU are quite different.

Our published prices for these are $16 a gram for U–235 and $30 a gram for plutonium, at the present time. I hope this helps.

Mr. JENSEN. Of course, I must admit it is considerably over my head, so to speak. I would just as soon admit that on the record. But maybe someone reading this record will gain some benefits from it. It might be helpful as time goes on.

Where does the isotope come from? What mineral or metal does the isotope come from that is used in medicine?

Dr. LIBBY. We use about a dozen different isotopes in medicine. I am sure that as time passes we are going to use many more. But iodine 131, for example, is one of the important ones. This can be made by a reactor. The best way is to make it by taking the fission products. It is one of the products of the splitting of the uranium or plutonium atoms, and you can use this fission product in medicine.

Another way to make radioactive iodine is to put in the reactor appropriate materials, which I believe is tellurium—you put tellurium in the reactor, take it out, and then from this "cow," as we call it, you can milk the iodine isotope by separating it chemically, for use in medicine.

Mr. JENSEN. In as few words as possible for you to use, tell us what the relationship is between U–235 and plutonium.

Dr. LIBBY. Well, U–235 is—they are different elements, just like iron and tin. They have in common the fact that they will blow up if you bring too much of either or both of them together.

Mr. JENSEN. If you bring the two together?

Dr. LIBBY. If you bring enough U–235 together, it will blow up. If you bring enough plutonium together, it will blow up. If you bring either of them together, they will blow up. They are fissionable materials.

ACCIDENT AT OAK RIDGE

That is why in processing, Mr. Jensen, we have to be very careful. We had an accident, which you read about a couple of weeks ago, in Oak Ridge. They made a little mistake. Mr. Bloch will correct my description of this accident, if this is incorrect.

They put a little bit too much U–235 in one waste barrel and it started to go. Fortunately, the people were not seriously injured—is that right, Dr. Dunham?

Dr. DUNHAM. They are getting along very well right now.

Dr. LIBBY. But it was a close thing. You have to be very careful. If you get too much of it, it will go.

Mr. JENSEN. You have a gage which registers all the time as to the radiation?

Dr. LIBBY. That is right. These men got outside of the room inside of 15 seconds, was it not? How soon did the gage warn these men?

Dr. DUNHAM. Immediately.

Mr. JENSEN. At the danger point.

Mr. FLOBERG. The alarm rings in a fraction of a second.

Dr. LIBBY. As to the requirement for both U–235 and PU, it depends on what the military wants in the way of bombs. That is the real answer to your question. We do not set that. We are told what they want.

Mr. JENSEN. Plutonium is more powerful and more easily exploded than U–235?

Dr. LIBBY. Yes.

Mr. JENSEN. Thank you.

Mr. RABAUT. Dr. Fenton.

Mr. FENTON. Mr. Chairman, I enjoyed that better than anything I have heard yet. I think maybe a little briefing course would be to the advantage of our subcommittee.

I believe we should have far more explanation of these things if we are to sit here and appropriate.

We have a Joint Committee on Atomic Energy, and they become well versed in the matter. Yet we are supposed to appropriate all these billions of dollars.

Because I have faith in you and the fine work you have done, I can go ahead and appropriate.

Now that you have a wonderful building out at Germantown, I would imagine it would pay us all sometime to go out there and maybe spend a couple of hours and go into the things which are necessary here.

Dr. LIBBY. We shall be very happy to have you do so.

PROCESS DEVELOPMENT

Mr. FENTON. I have just one observation I wish to make. In the category development appropriation, you have $37,159,000, which we know is necessary. And in your itemized list, estimates by category, you list equipment as $22 million.

I would like to know whether or not a lot of that equipment goes into the process development.

Mr. BLOCH. Some does. But the bulk of the equipment is for replacement or modification of process equipment in the production plants.

I can give you a general idea, Doctor, on this. Laboratory equipment makes up about $2 million of the total equipment request. This is associated with process development.

In addition, in a category which we call process equipment, there would be some additional money involving equipment necessary to carry out development work, such as mocking up a tank which requires a pump or a tank to prove out a chemical flow sheet, something of that nature.

But most of this is for equipment to go into the plants to keep our process operating.

Mr. FENTON. And there is no duplication in those two items?

Mr. BLOCH. No, sir.

Mr. FENTON. Going back to the isotopes, I recall, Mr. Chairman, down in Oak Ridge that we saw the variety of isotopes that you have.

Dr. LIBBY. Oak Ridge is our isotope capital, more or less.

Mr. FENTON. So I can understand that a little bit better for having seen that.

If the procurement and production are at about the same level for the past 3 years, why should there be a continued and increasing requirement for money for process development?

Mr. RABAUT. Supply the answer for the record.

Mr. BLOCH. Yes, sir.

(The information requested follows:)

COSTS OF PROCESS DEVELOPMENT PROGRAM

The process development program has resulted in dramatic gains in the special nuclear materials program both in production capability and in reduction in product cost. This program has paid its way many, many times over. Since the atomic energy program is still a relatively new industry, and in the special nuclear materials program we have many and varied plants, a reasonable level of effort on process development should be continued as long as we can realize the gains that additional knowledge from these developments give us. If our facilities had achieved no better than design capability we would have had to invest as a conservative estimate several billion dollars more to achieve the production levels we are currently experiencing. Our operating costs would probably be commensurately greater than those we now are experiencing. Despite the fact that over the past years we have had continued rising trend of costs (labor and material), we can say that largely as a result of our process development program, we have been able to keep our operating costs fairly stable. In addition, new requirements and new problems necessitate process development. For example, the fiscal year 1959 program includes increased effort in development work required for processing fuels from power reactors, continuation of an increased level of effort on the new production reactor initiated in fiscal year 1959, and work on such problems as separation and recovery of fission product from chemical wastes.

BASIS OF OVEC CONTRACT

Mr. JENSEN. Is it not true that AEC located its plant in the OVEC territory because of reserve capacity available in the electric systems of that area in case of failure of the OVEC steam electric plant so that continuity of service to AEC would be assured? Is that right?

Mr. BLOCH. Yes, sir, this is one of the factors. We had to have backup and reserve power to maintain our power supply. Various companies are committed to giving us power from their system any time the OVEC plants are down.

Mr. RABAUT. The committee will stand in recess until 1:30 p. m.

AFTER RECESS

Mr. RABAUT. The committee will come to order, please.

WEAPONS PROGRAM

We will insert in the record at this point pages 40 and 41.

(The pages referred to follow:)

WEAPONS PROGRAM, OPERATING COSTS

Program statement

Estimate fiscal year 1959	$547,600,000
Estimate fiscal year 1958	448,000,000
Increase	99,600,000

Summary of estimates by category

	Actual, fiscal year 1957	Estimated, fiscal year 1958	Estimate, fiscal year 1959
1. Production, storage, development and testing of atomic weapons	$323,285,197	$447,650,000	$544,600,000
2. Nonmilitary uses of nuclear explosives	0	350,000	3,000,000
Total weapons operating costs	323,285,197	448,000,000	547,600,000

JUSTIFICATION OF CATEGORIES

1. Production, storage, development, and testing of atomic weapons, $544,600,000.—The amount requested for fiscal year 1959 reflects the estimate of funds needed for the production, storage, development and testing of atomic weapons required to meet military needs.

Atomic research has continued to yield new information applicable to development of weapons and such data will be incorporated in the design of new models which will greatly enhance the capabilities of the Armed Forces. The developmental effort necessitates continuation of weapons test activities which are essential to advancement in this field.

2. Nonmilitary uses of nuclear explosives, $3 million.—This program provides for the research, development, testing and demonstration of devices directed toward the development of the nonmilitary uses of nuclear explosives. The nonmilitary uses now contemplated include excavation (harbors, canals, etc.), fill dirt production, oil recovery, mining, power, production and the production of isotopes. These programs hold such a great practical promise that the Commission feels that intensive development should be undertaken at the earliest date. The preliminary effort conducted during fiscal year 1958 will be accelerated in fiscal year 1959 to (1) expand the theoretical studies and research effort on all phases (2) initiate the design and development of prototype devices (3) to investigate certain industrial applications and (4) conduct preliminary studies directed toward the future conduct of an excavation demonstration. The full participation of private industry in this program will be encouraged. The program is being conducted by University of California Radiation Laboratory at Livermore, Calif.

Mr. RABAUT. I note here that the appropriation for 1958 was $448 million and the request for 1959 is $547,600,000, or an increase of $99,600,000.

UNOBLIGATED BALANCE

Will there be an unobligated balance in this program in this fiscal year?

General STARBIRD. It will be extremely small, sir.

Mr. RABAUT. These figures are so high I would like to know what these small amounts are.

General STARBIRD. I would estimate that it is in the neighborhood of a million or $2 million for this reason: In April we reprogramed and the funds becoming unobligated were applied against the request for reappropriation. However, I can provide the figure for the record, sir.

Mr. RABAUT. Please also supply the estimates and actual costs for each of the last 5 years.

(The figure referred to follows:)

ACTUAL COSTS, WEAPONS PROGRAM

Costs for the weapons program through May 1958 were $390.4 million. It is now estimated that June costs will be approximately $45 million. This is $7.5 above the May rate due to scheduled production and equipment deliveries and level of test activity. Although it is now estimated costs will be some $13 million less than the $448 million shown in the fiscal year 1958 column of the budget, the

difference will be largely obligated. This difference will be reflected in higher levels of outstanding commitments and inventories for required weapons materials, parts, and subcontracts due to unanticipated lag in deliveries of items on order. The net effect is an unobligated balance of about $1 million for the weapons Program.

Estimates and costs for last 5 years as follows:

	Estimate	Cost
1954	$299,400,000	$218,100,000
1955	320,900,000	238,200,000
1956	271,100,000	257,400,000
1957	299,400,000	323,300,000
1958	452,300,000	435,400,000

Mr. RABAUT. Is the request adequate to meet all requirements as you now see them?

General STARBIRD. It is sufficient to meet the requirements as we now see them, sir.

NONMILITARY USES OF NUCLEAR EXPLOSIVES

Mr. RABAUT. You appear to be undertaking a new series of activities under this appropriation which is called nonmilitary uses of nuclear explosives. Please explain what this is about and how the $3 million will be used.

Dr. LIBBY. I will make a short statement with respect to that.

Mr. RABAUT. All right.

Dr. LIBBY. This is to use bombs for nonmilitary purposes such as making aquifers for water storage as I described yesterday, that is, to break up rock and make it porous so that water can be stored in it. Another use is to make mining of such rock easier by breaking the rock up, and possibly to make atomic power. Under proper conditions, we calculate that we will have a great glob of molten rock left as a result of the explosion deep inside the mountain. We have in mind to try to pump water in there and get steam out as a sort of a natural geyser or hot spring. A fourth possible use we have in mind is to make isotopes by the surrounding of these bombs with the proper material which you want to radiate. You see, the bombs make a lot of neutrons. We also have in mind to improve the usability of oil shales.

Mr. RABAUT. Like in the Rockies?

Dr. LIBBY. Yes, or any place.

Now, all these things are conjectural. We have just begun. The $3 million is to try out these things. It is coupled, as General Starbird will say, with our new method of testing without radioactive fallout. By testing with bombs buried underground we have no radioactive fallout, you see. So, we have both ends in mind in this program. But the Plowshare project is the peaceful part of it; that is, the nonmilitary use part. The $3 million is to proceed to try out some of these things. We are extremely hopeful that it will grow.

Mr. RABAUT. Why is this program under the weapons heading?

Dr. LIBBY. The people who fire bombs are the weaponeers; they are the only people who know how to make them.

Mr. RABAUT. A weapon will be used to effect this?

Dr. LIBBY. Now. Of course, later, if we have success, we will make a device which does not have to fit into an airplane or missile

but can be hauled in a truck and that will be a different shape. It will be cheaper and so on.

Mr. RABAUT. You indicated on page 41 of the justifications that a preliminary effort conducted during fiscal 1958 will be accelerated in fiscal 1959. No mention of this program appears to have been made in the justifications given the committee last year.

On what basis is the decision made to take off on something like this? What funds have been diverted to the program this year?

Dr. LIBBY. I do not know that there was any. You see, our Plowshare project began out of the effort to get rid of fallout. We put our bomb in a mountain so that there would be no radioactive fallout. Then, as a result of this test, we incidentally observed, for example, the amount of rock that was broken. This is important to the testing technique. The distribution of energy, whether we had a hot glob or not, or whether the heat was passed around over the broken rock, this is important to the testing technique. So, we can justifiably say that all the Plowshare project grew out of that operation and the efforts and the data obtained had full military value and were wisely expended for this purpose. We will be able to proceed now if it should be in order to test weapons, at least in the smaller size ranges without radioactive fallout. This is such an important development that it fully justifies in my mind the expenditure of the fund involved.

PLOWSHARE PROJECT

Mr. JENSEN. Will you describe the Plowshare project, please.

Dr. LIBBY. The Plowshare project is the nonmilitary application of atomic explosions and consists of these various things I named.

Mr. RABAUT. I am not questioning this program, but here is a program that has been started. We never heard anything about it.

Dr. LIBBY. It was not born last year, Mr. Rabaut.

Mr. RABAUT. No, but decisions are made to go ahead with this. How far could other decisions be made to go ahead before any thought of it is given by the committee? Was anything told the other committee about this?

Dr. LIBBY. Yes; the Joint Committee knows about this project and has from its inception. We are not, I think, in a position of having spent funds for Plowshare entirely by itself to any appreciable degree during fiscal 1958.

Now, we do have people coming to talk about the Ranier shot and we do have our weapons people talking to people about the Ranier shot. I take my own time talking about it, and we have money of that sort spent in talking about the peaceful aspects of this development which was at its inception entirely military.

Mr. RABAUT. How far would the AEC go? Suppose they decide to shoot the moon. How far would they go without saying anything?

Dr. LIBBY. In the first place, we keep the Joint Committee informed of all things. This is really the inception of the project. We have had no separate money for Plowshare.

Mr. RABAUT. The project then was sort of discovered by——

Dr. LIBBY. By accident.

Mr. RABAUT. I was going to say "accident," but did not think it was the right word.

Dr. LIBBY. Method of testing. It has been in the back of people's minds for a long time and never taken very seriously until we fired this bomb.

Mr. RABAUT. Now you shot one of the Plowshare shots?

Dr. LIBBY. Yes, but it was shot for weapons-testing purposes, not for Plowshare purposes. However, we had it in mind.

Mr. RABAUT. There was no money really for that purpose.

Dr. LIBBY. I would like the general to make remarks along this line.

Mr. RABAUT. You may proceed, General Starbird.

General STARBIRD. We scheduled this shot, sir, for a purely military purpose, and we fired it basically for military purposes, finding out whether or not we could fire a device underground and completely contain the radioactivity. As far as we were concerned generally this was the purpose when the shot went off, although Dr. Libby had done a lot of forward thinking on what might be down there after the shot went off.

After the shot went, we had a chance then to get information that we could not wait for a longer period of time to get. The molten mass would cool. The reactivity would change. So, we did make certain expenditures there for drilling. Otherwise the main effort was carried on by our people at the University of California Radiation Laboratory in Livermore but they were the same people that would carry on weapons activities, and they were thinking of this in both its weapon and peaceful applications.

USE OF APPROPRIATED FUNDS

Mr. RABAUT. It is only natural that I ask a question about it. Here in the justification we have this language:

> The preliminary effort conducted during fiscal 1958 will be accelerated in fiscal 1959. First, expand the theoretical studies and research effort of all phases.

So, there is the accelerated effort in 1959 over what was done in 1958 although I am willing to take the statement you make that it was under the weapons program or whatever it was that this was set for. Nevertheless, it does come down to the initiation of the Plowshare programs for which no funds were sought from the committee.

If it were an accident as to what happened, then we accept it that way, but if it were for the purpose of starting a new project without informing the committee at all about it, that part we would not like and we do not like. I am still going to take the statement you make that it was accidental to the purpose for which it will now be channeled.

General STARBIRD. I will make one further statement to make you better understand the feeling toward it. We did of course report it to the Joint Committee.

Mr. RABAUT. They have nothing to do with the money that goes in this deal.

General STARBIRD. We have avoided carefully any announcement of a wide-scale effort until we could come before this committee. Actually we have incorporated in our comments to the Commission a statement that we should not announce that we are going ahead with a wide-scale effort until after we appeared before you.

Mr. RABAUT. You know, the Appropriations Committees are just a little bit jealous. We do not want to be left out of what you call the AEC family.

PROCUREMENT

In this program there is a large procurement operation. About how much material in terms of dollars is in the pipeline in this program? Are the lead times involved the same as used in your 1958 estimates?

Mr. McCarthy. Yes. We have used the same percentage of total costs as last year.

(Discussion off the record.)

Mr. Rabaut. Are there any questions on this weapons program?

Mr. Evins. I might ask one question, if I may.

Mr. Rabaut. Certainly.

RELATIONSHIP WITH THE DEPARTMENT OF DEFENSE

Mr. Evins. General Starbird, this may be elementary, but I think it might be well for you to state for the record that the Atomic Energy Commission's weapons program is based upon the recommendations of the Department of Defense and the Joint Chiefs of Staff; it is not your going out on your own; it is the military's recommendations in this field.

General Starbird. That is right, Mr. Evins.

Mr. Evins. Of course, 2 years ago it was $323 million; now your budget estimate is $547 million. That is over a half a billion dollars. That is a lot of money, a lot of weapons.

WEAPONS STOCKPILE

How many good weapons do we have stored away that we could use in addition to this half a billion dollars' worth here?

General Starbird. Perhaps I could help out, sir. Although I am a member of the Commission staff, I am also, as required by law, in this position, an officer of the military service. We find ourselves right now, as a nation, in this kind of position: A couple of years ago, perhaps it was 3 perhaps it was 4, we were the only ones who had an atomic weapon. We, therefore, could move slowly in the readying of them and in the delivery of them. It required a great deal less in the way of total numbers at that time, total modification and preparation, than as of the present day.

Now, however, there are all sorts of things coming into the picture that increase the requirement for numbers and particularly for complexity and the ability to deliver them immediately.

Just to mention a few, of course, first the Soviets have some kind of bomb delivery capability. How big it is, I do not know, but this requires a change in our picture because we then have to have air defense weapons. It is technically possible, whether it is actual or not, to deliver weapons in time by submarines. This then necessitates the building up of large stocks of weapons to take care of this particular type of threat. Some day, whether now or later, there will be the threat of the missile that has to be taken care of and a different type of weapon and warhead is necessary.

There is a change in the existing stockpile all the time to try to reflect what is going on, but I think what you can see from this is that we have to be ready now on many, many different fronts, and applications that were not required even as early as 2 years ago.

Mr. Evins. To my mind, this is the most important and essential money we can spend so that we will not be caught short with our lamps without any oil.

That is all, Mr. Chairman.

Mr. Rabaut. Mr. Jensen?

UNDERGROUND TESTS

Mr. Jensen. The test underground is considered successful?

Dr. Libby. Very successful.

Mr. Jensen. That being the fact, are you looking toward the time when you can make all of these tests underground?

Dr. Libby. I will ask General Starbird to correct me, if necessary. There are two kinds of things that you want to learn about in testing. One is whether the gadget itself explodes and the other is the effects; that is, whether you can knock over a tank or you can accomplish some military purpose.

Now, as I see it, and I will ask the General to correct me if I am wrong, we can accomplish all of the first objectives or nearly all of them. That is, if we have an idea how to make a bomb, we can see if it works. What we cannot do with this kind of testing is put an array of tanks out and see whether a bomb will knock them over. That we cannot do.

General Starbird. There is one other aspect that is rather a caution than a change.

We have fired something underground of less than 2 kilotons. We think that going forward from here to the future use of underground tests we should proceed conservatively. But it would be wrong to assume from the firing of 1 of only 2 kilotons that we can automatically fire anything we want underground.

Most of the good scientists believe this is true. We do not want to be in a position ever of holding up developments while we wait to see whether we can do something underground that need be done for our defense picture.

Mr. Floberg. I would like to point out one other limitation on underground testing. It has two parts to it. That is that complete weapons systems cannot be tested underground.

Therefore, there are some limitations of the effectiveness of underground testing.

Dr. Libby. This was 900 feet underground which held the 1.7 kiloton very well. It moved the mountain about 6 inches but it did not do much; it did not break the surface.

Mr. Jensen. What does it do to the underground water?

Dr. Libby. That is very interesting, Mr. Jensen. It does nothing. I will tell you why. The rock is melted, vaporized and the radioactivity is mixed in with this vaporized rock. Then when it cools the rock congeals and makes a glass and this glass is impervious to water. So, the water was not radioactive. This mountain was wet, incidentally. That is why we did not get any hot rock.

Mr. Jensen. Actually, your liquid mass reverts back to a solid mass after it is cooled.

Dr. Libby. The bowl blows itself a bubble, then the edge of which is molten glass. Of course, it breaks afterward when the pressure inside the bubble breaks due to cooling. All the radioactivity is in that glass.

Mr. JENSEN. It is in that so-called bubble that you think certain minerals can be stored?

Dr. LIBBY. I think we can make isotopes. I think we will be able to make heat if the mountain is not wet. This mountain was wet so the hot rocks cooled off right away, and these others things I recite I think we may be able to do. It is very exciting. I am sure some of these things will work.

Mr. JENSEN. It has led to many new discoveries?

Dr. LIBBY. Yes, sir. It is so important, in my opinion, that should we have a disarmament agreement, we should try by all means to make an agreement so that the nonmilitary applications, what we call Project Plowshare, could be carried on under the disarmament authority for the benefit of mankind.

Mr. RABAUT. General Starbird, we will now excuse you. I understand you want to be away.

General STARBIRD. No, sir; I have been. It is always a pleasure to be here and I am back again and I will remain.

REACTOR DEVELOPMENT PROGRAM

Mr. RABAUT. Reactor development. We will insert pages 51 through 94 in the record.

(The pages referred to follow:)

REACTOR DEVELOPMENT PROGRAM, OPERATING COSTS

Program statement

Estimate fiscal year 1959	$420, 300, 000
Estimate fiscal year 1958	329, 300, 000
Increase	91, 000, 000

The reactor development program includes the development of economically feasible nuclear powerplants for civilian power and commercial ship application, development of reactors and reactor systems to meet a wide range of military requirements and activities related to controlled thermonuclear program. Briefly stated, the objectives in the separate activities are:

CIVILIAN POWER REACTOR PROGRAM

1. To achieve safe reliable and economically competitive production of electric power from reactors as soon as possible in the United States.
2. To help other countries effect a transition to nuclear power.
3. To establish a complete and sound technological base for a future atomic energy industry.

ENGINEERING DEVELOPMENT AND APPLIED FUEL CYCLE PROGRAM

1. To provide broad support for materials, moderators, control techniques, reactor safety, separation and waste disposal systems.
2. To develop, manufacture and test fuel elements in full-scale power reactors in order to reduce nuclear power costs.

COMMERCIAL SHIP REACTORS

1. To demonstrate the practicality of nuclear-powered merchant ships.
2. To develop nuclear propulsion systems which can compete economically in world commerce.
3. To insure safe operation of nuclear-powered merchant ships and their acceptance in world commerce.

MILITARY REACTORS

1. To develop land-based reactor systems to meet military requirements for powerplants for use in remote areas and for unique military purposes.
2. To develop nuclear propulsion plants suitable for installation in naval vessels ranging from small submarines to large surface ships.
3. To develop nuclear propulsion plants for propulsion of manned aircraft.
4. To determine the feasibility of nuclear application in missiles and satellites and to develop those applications deemed feasible.

CONTROLLED THERMONUCLEAR PROGRAM

1. To achieve production of power through fusion.

The increase of $91 million in fiscal year 1959 over fiscal year 1958 is principally due to new and enlarged programs, related as follows:

1. An increase of $30.9 million in the civilian power reactor category for (*a*) increased developmental effort on boiling water and sodium graphite reactor systems, (*b*) intensified research and development in support of current or planned construction of experimental breeder reactor No. 2, liquid metal fuel reactor experiment, plutonium recycle test reactor, gas-cooled power reactor and heavy water components test reactor, and (*c*) expanded effort with both private and public utilities under the cooperative arrangements program.
2. An increase of $13 million for the applied fuel cycle development program.
3. An increase of $2.4 million in the commercial ship reactors category for engineering development for adaptation of a boiling water nuclear propulsion system to a large tanker and for work on the gas-cooled reactor.
4. An increase of $27.6 million in military reactor categories for further expansion in support of Department of Defense requirements.
5. An increase of $19.4 million in the controlled thermonuclear program.
6. An offsetting decrease of $2.3 million mainly in reactor systems and safety effort.

Summary of estimates by category

	Actual, fiscal year 1957	Estimate, fiscal year 1958	Estimate, fiscal year 1959
1. Civilian power reactors	$54, 291, 286	$82, 718, 000	$113, 590, 000
(*a*) Government program	52, 810, 069	74, 518, 000	90, 913, 000
(*b*) Cooperative arrangements program	1, 481, 217	8, 200, 000	22, 677, 000
2. Reactor systems research and development	9, 783, 576	11, 138, 000	10, 000, 000
3. Applied fuel cycle development	0	0	13, 000, 000
4. Reactor safety	3, 582, 243	8, 549, 000	7, 600, 000
5. Separations systems development	8, 881, 544	10, 475, 000	11, 000, 000
6. Commercial ship reactors	875, 198	2, 049, 000	4, 400, 000
7. Army package power reactors	2, 875, 555	5, 810, 000	8, 600, 000
8. Naval propulsion reactors	71, 662, 530	88, 664, 000	91, 400, 000
9. Aircraft propulsion reactors	82, 974, 210	78, 022, 000	100, 000, 000
10. Controlled thermonuclear project	10, 734, 745	20, 000, 000	39, 140, 000
11. All other	20, 889, 891	21, 875, 000	21, 570, 000
Total, reactor development program	266, 550, 778	329, 300, 000	420, 300, 000

JUSTIFICATION BY CATEGORIES

1. Civilian power reactors, $113,590,000

The major objective of the United States civilian nuclear-power reactor program is to achieve economic nuclear-power production as early as practical in the United States and to aid other nations seeking the same objective. It seeks to accomplish this objective in a manner which will minimize expenditures of Government funds. In the planning and direction of the Government reactor development program for civilian power purposes and the aiding of industrial power reactor projects, the overall policy of the Commission looks toward laying a broad and solid technological base for the future atomic energy industry.

Included in the civilian power program are the Government experimental reactors program and the power reactor demonstration program which complement and supplement each other. Promising new reactor systems are developed and evaluated in the Government experimental program which is almost com-

pletely Government financed. Systems which prove out under the experimental program may be carried into full-scale prototype stage either as power demonstration projects jointly financed by Government and industry, as independent industrial projects financed completely by industry, or as Government financed projects.

In addition to the funds requested in the operating budget, the plant acquisition and construction estimates include provisions for the modification of OMRE, EBWR, and the borax reactors to improve the experimental capabilities and broaden the scope of these reactors. Also included in the plant acquisition and construction estimates are hot cells and an addition to the fuels technology center. These facilities will permit examination of the effect of reactor radiations on reactor fuels and materials of construction and to facilitate the development of new reactor fuels and components and to advance the technology of reactor fuel materials such as uranium, thorium, ceramics, and of high neutron absorbing materials for reactor control procedures.

(a) Government program

	Actual, fiscal year 1957	Estimate, fiscal year 1958	Estimate, fiscal year 1959
(1) Pressurized water reactor	$14,718,340	$17,574,000	$20,400,000
(2) Boiling water reactor	5,003,785	3,959,000	5,513,000
(3) Homogeneous reactor	10,896,046	14,568,000	14,300,000
(4) Fast power breeder reactor	6,827,051	8,595,000	12,400,000
(5) Sodium graphite reactor	5,954,883	7,510,000	8,800,000
(6) Liquid metal fuel reactor	3,838,074	6,705,000	8,000,000
(7) Organic moderator reactor	3,636,592	5,319,000	3,500,000
(8) Plutonium recycle test reactor	1,376,596	3,581,000	5,000,000
(9) Pressurized heavy-water reactor	397,156	1,975,000	5,500,000
(10) Gas-cooled power reactor	0	3,751,000	6,000,000
(11) Advanced design studies	161,546	981,000	1,500,000
Total	52,810,069	74,518,000	90,913,000

During fiscal year 1959, seven AEC-owned power reactors or experiments will be in operation. These are the pressurized-water reactor (PWR), boiling reactor experiment-4 (Borax–4), boiling-water reactor experiment (EBWR), homogeneous reactor experiment-2 (HRE–2), experimental breeder reactor (EBR–1), sodium reactor experiment (SRE), and organic moderator reactor experiment (OMRE). An additional three reactors will be in the late stages of development or under construction. These will be plutonium recycle test reactor (PRTR), experimental breeder reactor-2 (EMBR–2), and heavy-water component test reactor. Development work will continue on the gas-cooled reactor with construction to be undertaken either as an industrial project with Government research and development support or as a Government construction program. Major directed development or design work will continue on the liquid-metal fuel reactor experiment (LMFRE), molten-salt reactor, and other promising approaches, as well as development work to improve and demonstrate engineering improvements in operating systems.

(1) Pressurized-water reactor

	Fiscal year 1958	Fiscal year 1959
Total	$17,574,000	$20,400,000
Research and development	16,294,000	11,900,000
Fuel fabrication	700,000	6,500,000
Test operations	580,000	2,000,000

Construction of the pressurized-water reactor plant at Shippingport, Pa., was completed in fiscal year 1958. The plant went critical in December 1957, and operated at various power levels up to 60,000 kilowatts net electrical output during the balance of the fiscal year, delivering power to the Duquesne Light system.

In fiscal year 1959, the research and development effort on the pressurized-water reactor plant will be continued at a reduced level because research and

development associated with initial construction has been completed. Development of replacement seeds for core 1 and of a complete replacement core of improved design will constitute approximately 70 percent of the dollar value of this work. Fuel development will include nuclear, thermal, and mechanical core design, including flexible critical experiments, fuel metallurgy and fuel manufacturing process development.

The balance of the research and development effort will consist of required design changes in existing systems and components, metallurgical and chemical analyses other than those pertaining to reactor fuel, and the collection, analysis, and reporting of data obtained from operation of the reactor plant.

In fiscal year 1958, fabrication of the first replacement seed (seed 2) for the initial core began. In fiscal year 1959, fuel costs will increase as seed 2 is completed and the fabrication of core 2 is begun.

During the second half of fiscal year 1958, initial tests of the operation of the Shippingport plant were conducted. In fiscal year 1959, the plant will be in operation at sustained high-power levels. Tests will be conducted throughout the year to evaluate design and performance of the reactor plant. Funds required for operation and maintenance of the nuclear portion of the Shippingport plant are exclusive of the Duquesne Light Co. operating contribution.

(2) Boiling-water reactor

	Fiscal year 1958	Fiscal year 1959
Total	$3,959,000	$5,513,000
Research and development	3,354,000	3,660,000
Fuel fabrication:		
Borax	0	448,000
EBWR	0	855,000
Test operations:		
Borax	312,000	300,000
EBWR	293,000	250,000

The general research and development program on boiling reactors will continue throughout fiscal year 1959 with principal emphasis directed toward improved and less expensive fuels, and physics development. Substantial research and development effort is required to initiate a nuclear superheat program aimed at reducing power costs for boiling water reactors. It is intended that the general evaluation and development work for nuclear superheat will be performed at the Argonne National Laboratory. Evaluation, development, design, and demonstration of specific methods of achieving nuclear superheat will be carried out by direct contract with several manufacturers, each working on an essentially different approach to the problem. Operation of the EBWR during fiscal year 1959 will be directed toward the investigation of the boiling light water cycle using both natural and forced circulation. Natural circulation tests to date have indicated such promising results that increased heat dissipation capacity will be installed. Fabrication and installation of a larger core will also be completed. The additional heat dissipation capacity and new core are rexpected to raise the thermal output of this reactor to 100 megawatts. The forced circulation pump will be placed in the system to determine the effect of controlled recirculation on reactor power. Experiments with purposely failed fuel elements will be performed to evaluate the extent of and problems resulting from radioactive carryover to nonnuclear components.

The Borax-IV reactor will continue to operate into the early part of fiscal year 1959 with further experiments on purposely failed fuel elements and investigation of reactor stability levels. Following these tests, major modifications will be initiated in the facility and a new core will be fabricated leading to Borax-V. This modified facility will permit examination and evaluation of higher natural recirculation rates with high riser geometry, and of the associated high power densities for the primary purpose of direct comparison with forced circulation. There will be continued study of the effects of large amounts of reactivity in the steam voids on reactor stability, and possible preliminary evaluation of fuel elements designed for nuclear superheater application.

(3) Homogeneous reactor

	Fiscal year 1958	Fiscal year 1959
Total	$14,568,000	$14,300,000
Research and development:		
Aqueous homogeneous	9,399,000	8,600,000
Molten salt	2,700,000	4,000,000
Test operations (HRE-2)	2,469,000	1,700,000

The reduction in research and development costs in fiscal year 1959 results from the completion of HRE–2 fabrication. The HRE–2 achieved criticality on December 27, 1957. Following zero and low power level experiments, the reactor was gradually brought up to its full design power level of 5,000 thermal kilowatts, which was attained on April 4, 1958. A short time later the reactor was shut down because of an internal leak which developed in the zircaloy wall separating the core from the blanket region. The reactor is to be restored to operating condition as rapidly as possible. The program for fiscal year 1959 will include operation of HRE–2; development and testing of new zirconium core vessel alloys; the performance of special in-pile tests to obtain explanations for the effect of radiation on the corrosion of Zircaloy-2, stainless steel, and titanium; the performance of other in-pile tests to determine the effects of irradiation on materials in slurry systems; the continuation of fuel processing experiments on the HRE–2; and preliminary development and conceptual design work for a two-regional homogeneous system. Work will continue on slurry systems development.

The molten salt reactor program, initiated in November 1957, has been directed toward engineering tests and design studies which have established its technical feasibility and economic promise. During fiscal year 1959 a conceptual design for a molten salt reactor experiment of about 60,000 thermal kilowatts will be completed and evaluated, while the basic program of related research and development will be continued at about the same level of the last 8 months of fiscal year 1958. Research and development will continue at the same rate as fiscal year 1958, including extensive loop experimentation, component development and test.

(4) Fast power breeder reactor

	Fiscal year 1958	Fiscal year 1959
Total	$8,595,000	$12,400,000
Solid fuel approach	5,905,000	9,400,000
Research and development	5,351,000	8,153,000
Fuel fabrication	384,000	867,000
Test operations	170,000	380,000
Molten fuel approach	2,690,000	3,000,000
Research and development	2,643,000	2,900,000
Experiment fabrication (LAMPRE-I)	47,000	100,000

Solid fuel approach.—Substantial increases and intensification of the research and development program in fiscal year 1959 are planned at the Argonne National Laboratory in support of the EBR–II construction program. Construction of the EBR–II, a 62.5 MWT experiment, was initiated in fiscal year 1958 at the National Reactor Testing Station. Reactor startup is scheduled for May 1960. Extensive development and testing of all major reactor components and fuel and core development will continue throughout fiscal year 1959. Core loadings and plutonium critical experiments will be carried out.

In order to resolve the effect of bowing on the reactivity of a fast breeder review, the EBR–I, Mark III rigid core was installed and has been tested during the last 7 months of fiscal year 1958. Tests will continue in fiscal year 1959. During fiscal year 1959 the core will be modified to its nonrigid form and subjected to the same tests. If the bowing experiments conclude successfully, it is planned to initiate fabrication of a plutonium or plutonium-uranium core during

fiscal year 1959. Fabrication of EBR–II, and its core 1 and blanket will be initiated in fiscal year 1959.

Molten fuel approach.—The LAMPRE–I reactor experiment at the Los Alamos Scientific Laboratory will be completed in fiscal year 1959. Research and development and test operations will be carried out on the LAMPRE–I, and development and conceptual design of LAMPRE–II, a larger size, higher performance reactor will be continued. This will require investigations in designing transfer systems for molten plutonium, practical reprocessing techniques for used fuel, and improved control mechanisms.

(5) *Sodium graphite reactor*

	Fiscal year 1958	Fiscal year 1959
Total	$7,510,000	$8,800,000
Research and development	5,994,000	7,300,000
Fuel fabrication	314,000	0
Test operations	1,202,000	1,500,000

Over half of the increase in this category is for the development of more reliable and less expensive nonnuclear components which can be used in all reactors utilizing sodium as a coolant. Work will be accomplished by contractors to be selected before the end of fiscal year 1958, with development work to start early in fiscal year 1959. Initial development will concentrate on steam generators, intermediate heat exchangers and sodium flow controllers.

Research and development related more specifically to the SRE will continue in fiscal year 1959 at about the same level as fiscal year 1958 with principal emphasis on nuclear and mechanical aspects of a modified core design. Development and design of a uranium oxide fuel element for the third loading of the SRE will continue. Operation of the SRE will continue throughout fiscal year 1959, with a slight increase in manpower for a more extensive test operating program.

(6) *Liquid metal fuel reactor*

Fiscal year 1958	$6,705,000
Fiscal year 1959	8,000,000

The Babcok & Wilcox Co. will proceed with an expanded program of component development, engineering and preliminary design of a 5-megawatt (thermal) liquid metal fuel reactor experiment which will be initiated in fiscal year 1960. A 5-megawatt experiment was selected for the first reactor in the liquid metal development because it involves considerably smaller risk than would have been entailed in immediate construction of the 20-megawatt reactor previously planned. Construction of the 20-megawatt experiment has been deferred until sometime after fiscal year 1959. A series of loop experiments and inpile tests initiated in fiscal year 1958 will be continued during fiscal year 1959 to define the temperature limitations and material compatibility of the fluid fuel. Development of high-temperature instrumentation, remote maintenance equipment, and specialized components for liquid metal service will be performed. The Brookhaven National Laboratory will continue supporting development work for the LMFRE and basic research on materials, physics and chemical processing for advanced LMFR reactors. The work at Brookhaven National Laboratory and the Babcock & Wilcox Co. on slurries of uranium in molten bismuth will be emphasized and accelerated.

(7) *Organic moderator reactor*

	Fiscal year 1958	Fiscal year 1959
Total	$5,319,000	$3,500,000
Research and development	4,355,000	2,300,000
Fuel fabrication	182,000	400,000
Test operations	782,000	800,000

Principal areas of work in fiscal year 1959 include studies to evaluate the changes in the organic coolant under irradiation and to determine the effect of the changes in coolant on reactor operation. Research on methods to reduce the rate of organic decomposition and development of organics with higher resistance to radiolytic decomposition will continue at a reduced rate. The research and development effort on organic power reactor systems will decrease in fiscal year 1959 as definitive research and development work is started on the organic moderator reactor to be built under the cooperative arrangements program. General research and development will be continued on improved organic materials, fuel and component development, and heat transfer studies.

The OMRE which began high power operation in February 1958 will be operated during most of fiscal year 1959 with various combinations of organic temperature, power levels, and concentration of polymerized organic in the coolant to determine the organic decomposition rates for these conditions. A second loading of fuel elements will be completed and installed during fiscal year 1959. Fabrication of a third loading of fuel elements, required for operation of the OMRE in fiscal year 1960, will be started.

(8) Plutonium recycle test reactor

Fiscal year 1958	$3, 581, 000
Fiscal year 1959	5, 000, 000

In fiscal year 1958, construction was undertaken on a plutonium fabrication laboratory to provide a facility to develop and fabricate plutonium bearing fuel elements and on a plutonium recycle test reactor to test the fuel elements and demonstrate the feasibility of the recycling process in thermal heterogenous reactors. Both facilities are scheduled for completion by late fiscal year 1960. Increased research and development emphasis will be directed toward (*a*) the engineering and economic analysis of the entire fuel cycle, (*b*) development and testing of various fuel element designs, (*c*) chemical and engineering studies to develop optimum low-cost separations technqiues, (*d*) theoretical and experimental physics studies, (*e*) development and testing of reactor components, materials, instrumentation, and control and safety systems, and (*f*) preparation of plans for the startup and experimental operation of the plutonium recycle test reactor.

(9) Heavy water reactor

Fiscal year 1958	$1, 975, 000
Fiscal year 1959	5, 500, 000

The increase in this activity is required to support the initiation of design and construction of the heavy water components test reactor and evaluation and design of a full-scale power reactor. Fuel element development will include studies of metallic and oxide elements, fuel irradiation in Savannah River and Canadian NRU reactors, post irradiation studies and evaluations, corrosion tests, and experiments on burnout characteristics. Physics experiments will be conducted in a new pressurized exponential facility. Relative evaluations will be carried out on pressure vessels and tube designs along with overall designs and evaluation studies of optimum heavy water reactors.

(10) Gas-cooled power reactor

Fiscal year 1958	$3, 751, 000
Fiscal year 1959	6, 000, 000

A series of design studies on natural and slightly enriched uranium graphite moderated, gas-cooled reactors was undertaken in fiscal year 1958 by Kaiser Engineers, ACF Industries, and the Oak Ridge National Laboratory. A research and development program was initiated at Oak Ridge National Laboratory relating to the design and development of gas-cooled reactors. These design and development studies indicated that slightly enriched gas-cooled reactors have potential for economically competitive nuclear power in this country. The plant and acquisition authorization includes the construction of such a project. Construction is scheduled to start in late fiscal year 1959. Preliminary design of a prototype started by Kaiser Engineers in fiscal year 1958 will be concluded in early 1959. Supporting research and development at Oak Ridge will be continued in fiscal year 1959 with principal emphasis on development of uranium oxide fuel elements, studies of high temperature structural and fuel element cladding materials, and material compatibility studies. At Hanford, work will continue on graphite studies and other gas-cooled development work. In addi-

tion, preliminary development of more advanced gas-cooled concepts will be performed.

(11) Advanced design studies

Fiscal year 1958	$981,000
Fiscal year 1959	1,500,000

Work in this category consists of (*a*) selecting several new reactor concepts or major modifications to existing systems for preliminary design, development, and system evaluation. These studies develop sufficient technical and economic information to decide whether or not to proceed with an expanded preconstruction research and development program, (*b*) initiating economic studies and evaluations of more general applicability to power reactor development, and (*c*) system and economic evaluations of advanced power reactors of types presently under experimental development to assist in determining the economic potential of these reactors.

The technology and economics of power reactors is changing very rapidly as experimental reactors are completed and tested and new materials and components are developed. It is essential that the significance of these new developments be determined in order to adjust the emphasis of the experimental program and assure rapid development of competitive nuclear power.

(b) Cooperative arrangements program

	Fiscal year 1957	Fiscal year 1958	Fiscal year 1959
(1) Yankee Atomic Electric Co	$1,196,613	$2,156,000	$1,647,000
(2) Fast reactor systems (PRDC)	62,158	900,000	1,250,000
(3) Consumers Public Power District	0	2,500,000	6,000,000
(4) City of Piqua, Ohio	0	200,000	1,800,000
(5) Chugach Electric Association of Alaska	222,446	1,694,000	2,000,000
(6) Northern States Power Co	0	750,000	2,580,000
(7) Pennsylvania Power & Light	0	0	5,400,000
(8) Carolina-Virginia Nuclear Power Associates	0	0	1,000,000
(9) East Central and Florida West Coast Nuclear Power Groups	0	0	1,000,000
Total	1,481,217	8,200,000	22,677,000

The power demonstration reactor program is designed to bring the resources of industry into the development of engineering and economic information on the performance of nuclear power reactors and thus to advance the time when nuclear power becomes economically competitive.

As a result of the first round invitations, contracts have been concluded with three utility organizations. Research and development assistance will be provided in fiscal year 1959 toward the construction of large scale powerplants by the Yankee Atomic Electric Co. and the Power Reactor Development Co. The Commission will continue to perform research and development for the Hallam nuclear power facility to be built on the system of the Consumers Public Power District project. Consumers is contributing to the cost of the facility. The second round invitation had as its objective accelerating development of relatively small size reactors which would be suitable for use abroad and in certain parts of the United States. Seven proposals were received of which three are still active. In fiscal year 1959, the Commission will be participating in research and development and construction in cooperation with the city of Piqua, Ohio. Research and development will be continued on the project for Chugach Electric Association of Alaska and construction will be initiated on the Elk River reactor.

The third invitation to industry called for proposals with no limitation on the type or size of reactors except that they should make a significant contribution toward achieving commercial utilization of nuclear power. Research and development assistance will be provided in fiscal year 1959 for projects to be built by Northern States Power Co., Carolinas-Virginia Nuclear Power Associates, Inc., Pennsylvania Power & Light Co., and East Central and Florida West Coast Nuclear Groups.

(1) Yankee Atomic Electric Co.

Fiscal year 1958	$2,156,000
Fiscal year 1959	1,647,000

On June 4, 1956, the Commission and Yankee Atomic Electric Co. entered into a cost reimbursement contract with a ceiling of $5 million for work on fuel element

component development, criticality experiments, and irradiation studies. Approximately $300,000 of this contract work will be done in AEC facilities and the balance in private facilities.

(2) Fast reactor systems (PRDC)

Fiscal year 1958	$900,000
Fiscal year 1959	1,250,000

On March 2, 1957, the AEC and Power Reactor Development Co. executed a contract under which the AEC will provide research and development assistance in AEC facilities up to a maximum cost of $4,450,000. The research and development work will consist primarily of consulting services, critical experiments, material irradiations, and fuel development.

(3) Consumers Public Power District

Fiscal year 1958	$2,500,000
Fiscal year 1959	6,000,000

Early in fiscal year 1958, the Commission and Consumers Public Power District entered into a cost reimbursement contract with a ceiling of $8 million for unusual maintenance and excess fuel cycle costs associated with operation of the sodium graphite reactor plant. The AEC will finance preoperational research and development work which will be performed by Atomics International on a cost reimbursement basis, without ceiling, estimated to cost a maximum of $18,165,000. It is contemplated that this work will consist primarily of component design, engineering development and testing, and nuclear plant design. In addition, AEC will design and contract for the construction of the nuclear portion of the power plant. These requirements are provided for under the "Plant acquisition and construction" appropriation.

(4) City of Piqua, Ohio

Fiscal year 1958	$200,000
Fiscal year 1959	1,800,000

It is expected that a contract will be executed before the end of fiscal year 1958 between the Commission and the city of Piqua, Ohio, which calls for the AEC to provide research and development assistance and to construct a 12,000 kilowatts (electric) organic moderated and cooled power reactor. The work will be performed in Commission facilities and the preconstruction is currently estimated at $3,500,000. It is planned that this will include work on reactor design and fuel element concepts. Postconstruction operating cost is estimated at $3,318,000.

(5) Chugach Electric Association of Alaska

Fiscal year 1958	$1,694,000
Fiscal year 1959	2,000,000

The AEC is conducting the research and development work under contract with Nuclear Development Corporation of America at no cost to Chugach Electric Association preliminary to a decision on construction of the reactor. The currently estimated preconstruction cost is $9,880,000. Postconstruction operating cost is estimated at $2.5 million. The decision to proceed with construction is expected to be made late in fiscal year 1959.

(6) Northern States Power Co.

Fiscal year 1958	$750,000
Fiscal year 1959	2,580,000

Extensive research and development in such areas as fuel elements, heat transfer, fluid flow, corrosion, components, and irradiation studies are being conducted under the contract between the AEC and Northern States Power Co. executed on November 22, 1957. The cost reimbursement contract, with a ceiling of $5,500,000 for preconstruction research and development, calls for approximately $5 million to be expended in private facilities and $500,000 in AEC facilities. Postconstruction operating cost is estimated at $500,000.

(7) Pennsylvania Power & Light Co.

Fiscal year 1958	0
Fiscal year 1959	$5,400,000

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The proposal provides for AEC assistance in preconstruction research and development designed to yield the further information required to permit a prudent decision concerning the construction of a nuclear powerplant of 70,000 to 150,000 net electrical kilowatts based on a single-region, slurry-type, aqueous homogeneous reactor. The scope of the work with a maximum cost to the AEC of $7 million, covers the nuclear, chemical, and mechanical aspects of this reactor system. It is expected that a contract will be executed early in fiscal year 1959 between the Commission and Pennsylvania Power & Light covering this work.

(8) Carolina-Virginia Nuclear Power Associates

Fiscal year 1958	0
Fiscal year 1959	$1, 000, 000

The proposal calls for the AEC to provide preconstruction research and development assistance on a cost-reimbursement basis up to a ceiling of $10,145,000. Principal areas of research include fuel-element development, in-pile experiments, component development, plant system development, safety analysis, and critical experiments. It is expected that a contract will be executed before the end of fiscal year 1958, between the Commission and the Carolina-Virginia Nuclear Power Associates covering this work. Postconstruction operating cost is estimated at $3,760,000.

(9) East Central and Florida West Coast Nuclear Power Groups

Fiscal year 1958	0
Fiscal year 1959	$1, 000, 000

Under the proposal, the AEC will provide preconstruction research and development assistance to a maximum of $8,646,000. The principal areas of development include pressure tubes, fuel elements, and physics studies. It is expected that a contract will be executed early in fiscal year 1959 covering this work. Postconstruction operating cost is estimated at $3 million.

The following tables indicate in detail various features of the reactors being built under the cooperative arrangements program as well as the funding for each project.

Specifications	First invitation		Second invitation				Third invitation			
	Yankee Atomic Electric Co.	Consumers Public Power District	Power Reactor Development Co.	Rural Cooperative Power Association	Chugach Electric Association	City of Piqua	Northern States Power Co.	East Central and Florida, West Coast Nuclear Power Groups	Carolinas-Virginia Nuclear Power Association	Pennsylvania Power & Light Co.
Location	Rowe, Mass.	Hallam, Nebr.	Monroe, Mich.	Elk River, Minn.	Anchorage, Alaska.	Piqua, Ohio	Sioux Falls, S. Dak.	Not announced.	Parr Shoals, S. C.	East Pennsylvania.
Type of reactor	Pressurized Water.	Sodium Graphite.	Fast Breeder	Boiling Water.	Sodium-cooled.	Organic Mod.	Boiling Water.	Gas-cooled D_2O-Mod.	Pressurized D_2O.	Aqueous Homogeneous.
Heat output	492,000 kilowatts.	245,000 kilowatts.	300,000 kilowatts.	73,000 kilowatts.[1]	40,000 kilowatts.	45,500 kilowatts.	203,000 kilowatts.[2]	179,000 kilowatts.	60,500 kilowatts.	500,000 kilowatts.
Electrical output, net.	110,000 kilowatts.	75,000 kilowatts.	90,000 kilowatts.	22,000 kilowatts.	10,000 kilowatts.	11,400 kilowatts.	62,000 kilowatts.	46,000 kilowatts.	16,950 kilowatts.	70,000–150,000 kilowatts.
Amount of fuel	22,800 kilograms.	23,800 kilograms.	1,800 kilograms.	3,708 kilograms of thorium.	10,000 kilograms.	6,250 kilograms.	4,100 kilograms.	30,000 kilograms.	3,160 kilograms.	14,980 kilograms of thorium.
Enrichment, percent U–235.	3.02	2.5	27	About 93	About 2	1.8	1.6	1.15	2	About 93.
Reactor outlet temperature (°F).	Approximately 600°.	925°	800°	531°	950°	600°	489°	1,070°	574°	580°.
Reactor pressure.	2,000 pounds per square inch.	Negligible	Negligible	875 pounds per square inch.	Negligible	120 pounds per square inch.	600 pounds per square inch.	535 pounds per square inch.	1,500 pounds per square inch.	2,000 pounds per square inch.
Steam conditions (pounds per square inch at °F.).	520 at 471°	800 at 825°	600 at 740°	600 at 825°	850 at 850°	450 at 550°	500 at 825°	1,000 to 1,800 at 1,000°.	415 to 725°	400 pounds per square inch saturated.
Criticality	July 1960	January 1962	August 1960	October 1960	July 1962	July 1961	June 1962	June 1963	June 1962	Not available.

[1] Includes 14,800 kilowatts of conventional superheating capacity.

[2] Includes 39,000 kilowatts from superheater.

Summary of Authorization and Funding

Power reactor demonstration program (cooperative arrangements)

[In thousands]

	Authorization					Obligations				
	Provided by Congress, 1958	Revised requirement			Total	Appropriated in 1958	Revised schedule of obligations			Total
		1958	1959	After 1959			1958	1959	After 1959	
1ST ROUND										
Consumers Public Power District:										
Preconstruction research and development	$18,165	$18,165	0	0	$18,165	$3,151	$2,500	$6,000	$9,665	$18,165
Unusual maintenance and fuel cycle costs	8,000	8,000	0	0	8,000	8,000	8,000	0	0	8,000
Construction	24,013	24,013	0	0	24,013	24,013	10,000	13,540	473	24,013
Total consumers	50,178	50,178	0	0	50,178	35,164	20,500	19,540	10,138	50,178
Power Reactor Development Corp	[1] 1,500	1,500	$2,809	0	4,309	1,500	900	1,250	2,159	4,309
Total, 1st round	51,678	51,678	2,809	0	54,487	36,664	21,400	20,790	12,297	54,487
2D ROUND										
Rural Cooperative Power Association (Elk River):										
Preconstruction research and development	2,760	0	0	0	0	2,760	0	0	0	0
Construction	5,686	9,269	0	0	9,269	5,686	9,269	0	0	9,269
Total, Elk River	8,446	9,269	0	0	9,269	8,446	9,269	0	0	9,269
Wolverine Electric Cooperative Association:										
Preconstruction research and development	1,635	0	0	0	0	1,635	0	0	0	0
Construction	3,837	0	0	0	0	3,837	0	0	0	0
Total, Wolverine	5,472	0	0	0	0	5,472	0	0	0	0
City of Piqua:										
Preconstruction research and development	3,500	3,500	0	0	3,500	1,500	200	1,800	1,500	3,500
Construction	4,010	5,487	0	0	5,487	4,010	5,487	0	0	5,487
Total, city of Piqua	7,510	8,987	0	0	8,987	5,510	5,687	1,800	1,500	8,987

Chugach Electric Association:										
Preconstruction research and development	9,080	8,155	0	0	8,155	9,080	4,000	4,155	0	8,155
Construction	6,729	9,229	0	0	9,229	750	0	0	9,229	9,229
Total, Chugach Electric Association	15,809	17,384	0	0	17,384	9,830	4,000	4,155	9,229	17,384
Postconstruction research and development:										
City of Piqua		3,318	0	0	3,318		3,318	0	0	3,318
Rural Cooperative Power Association (Elk River)		2,176	0	0	2,176		2,176	0	0	2,176
Chugach Electric Association		2,500	0	0	2,500		0	2,500	0	2,500
Wolverine Electric Cooperative Association		0	0	0	0		0	0	0	0
Total, post construction research and development	11,000	7,994	0	0	7,994	11,000	5,494	2,500	0	7,994
Total, 2d round	48,237	43,634	0	0	43,634	40,258	24,450	8,455	10,729	43,634
3D ROUND										
Northern States Power Co.:										
Preconstruction research and development		5,500	0	0	5,500		5,500	0	0	5,500
Postconstruction research and development		500	0	0	500		500	0	0	500
Total, Northern States		6,000	0	0	6,000		6,000	0	0	6,000
Carolinas-Virginia Nuclear Power Association:										
Preconstruction research and development		10,145	0	0	10,145		10,145	0	0	10,145
Postconstruction research and development		3,760	0	0	3,760		3,760	0	0	3,760
Total, Carolinas-Virginia		13,905	0	0	13,905		13,905	0	0	13,905
East Central Nuclear Group and Florida West Coast Nuclear Group:										
Preconstruction research and development		8,646	0	0	8,646		0	6,097	2,549	8,646
Postconstruction research and development		3,000	0	0	3,000		0	3,000	0	3,000
Total, ECNG-FWCNG		11,646	0	0	11,646		0	9,097	2,549	11,646
Total, 3d round	30,000	31,551	0	0	31,551	30,000	19,905	9,097	2,549	31,551
Pennsylvania Power & Light Co.:										
Preconstruction research and development (phase I)		7,000	0	0	7,000		0	7,000	0	7,000
Preconstruction research and development (phase II)		0	0	$15,290	15,290		0	0	15,290	15,290
Postconstruction research and development (phase II)		0	0	3,040	3,040		0	0	3,040	3,040
Total, Pennsylvania Power & Light Co		7,000	0	18,330	25,330		0	7,000	18,330	25,330

[1] Authorized for fast breeder research and development in 1958.

Power reactor demonstration program (cooperative arrangements)—Continued

[In thousands]

	Authorization					Obligations				
	Provided by Congress, 1958	Revised requirement			Total	Appropriated in 1958	Revised schedule of obligations			Total
		1958	1959	After 1959			1958	1959	After 1959	
3D ROUND—continued										
Pennsylvania Power & Light Co—Continued										
Additional proposals	0	0	$20,000	0	$20,000	0	0	0	$20,000	$20,000
Subtotal	$129,915	$133,863	22,809	$18,330	175,002	$106,922	$65,755	$45,342	63,905	175,002
Operations	(85,640)	(85,865)	(22,809)	(18,330)	(127,004)	(68,626)	(40,999)	(31,802)	(54,203)	(127,004)
Construction	(44,275)	(47,998)	(0)	(0)	(47,998)	(38,296)	(24,756)	(13,540)	(9,702)	(47,998)
Carryover to 1959:										
Operations						0	27,627	−27,627	0	0
Construction						0	13,540	−13,540	0	0
Grand total	129,915	133,863	22,809	18,330	175,002	106,922	106,922	4,175	63,905	175,002

2. Reactor systems research and development, $10,000,000

	Fiscal year 1957	Fiscal year 1958	Fiscal year 1959
(*a*) Reactor design and evaluation	$1,045,073	$312,000	$700,000
(*b*) Reactor physics	2,744,765	3,633,000	3,000,000
(*c*) Reactor fuels and materials development	5,272,570	5,991,000	5,500,000
(*d*) Reactor engineering	571,567	649,000	400,000
(*e*) Advanced testing and research reactors	0	446,000	400,000
(*f*) Manuals and data books	149,601	107,000	0
Total	9,783,576	11,138,000	10,000,000

The objectives of this program are to develop and evaluate those types of engineering data which are necessary either to broaden the horizons of reactor technology or, more immediately, to provide support to reactor projects now underway or in the offing. A healthy, long-range reactor-development program demands that new ideas, materials, components, and processes be vigorously investigated; that advanced reactor designs be conceived and evaluated; that available nuclear and engineering data be analyzed. Fiscal year 1959 costs under this program are a reflection of the continued scientific and engineering effort required to further these objectives and hasten the achievement of economic nuclear power.

(*a*) *Reactor design and evaluation*

Fiscal year 1958 ..... $312,000
Fiscal year 1959 700,000

In keeping with the aim of advancing reactor technology, this activity provides for the performance of limited theoretical and experimental work required to "prove" the value of new and promising reactor concepts.

These concepts will be explored and problem areas isolated. A concerted development effort in the key problem areas will then be undertaken. If this development indicates that the concept is technically feasible and has potentialities for production of economic power, it may be recommended as the basis of a reactor project.

Investigations are currently being performed on direct conversion of fission energy (heat) to electrical energy, on glass fiber fueled reactors, and on process heat reactors. New concepts proposed and being evaluated include gaseous-fueled reactors, fast oxide breeders reactors, epithermal breeder reactors, fused sodium hydroxide coolants and moderators, and high-temperature gas-cycle reactors.

(*b*) *Reactor physics*

Fiscal year 1958 ..... $3,633,000
Fiscal year 1959 3,000,000

Studies will be continued on various possible combination of fuels, moderators, coolants, shielding materials, control methods, reflectors and other constituents which can be used in nuclear reactors. Cross-section and other nuclear data will continue to be obtained through the use of exponential experiments, critical assemblies, and reactivity measuring facilities at various contractor sites. Beginning in fiscal year 1959, data will be obtained from a pulse neutron source (linear electron accelerator) at General Atomics, and beginning in fiscal year 1960 from a Commission-owned machine at Rensselaer Polytechnic Institute. Data obtained from all these sources will be analyzed for their significance to reactor design. Studies will be undertaken on use of computers as aids in reactor design. Nuclear constants and other data relating to the physics of reactors will be compiled and published. Alternate methods of reactor control will be evaluated on an expanded basis in conjunction with intensified materials investigations. There will be continued study of the effects of radiation on the various constituents of nuclear reactors, including such effects as changes in physical properties, corrosion, changes in reactivity and poison content.

(*c*) *Reactor fuels and materials development*

Fiscal year 1958 ..... $5,991,000
Fiscal year 1959 5,500,000

Research and development on fuels and materials will continue at approximately the fiscal year 1958 level. Utilization of plutonium and U–233 as fuels will be investigated intensively. Fuels able to operate in reactors for long periods at high temperatures will be sought. Performance of metallic alloys, oxides, and cermet fuels will be evaluated under long irradiation periods and high flux conditions.

Data will be gathered on the physical and mechanical properties of metals, alloys, and materials which may have value when used as fuel cladding or reactor components. Studies will be undertaken on little-known materials, such as rare earth metals, which possess attractive qualities for use in reactor environments. New alloys and materials will be developed and studied.

A comprehensive program to provide scientific information and technology on control rod materials is being initiated. This program will be undertaken by an industrial organization yet to be selected and will provide data suitable for use by reactor designers.

Methods for the nondestructive testing of fuel elements and reactor components will be expanded in order to reduce fuel element cost.

(d) Reactor engineering

Fiscal year 1958	$649,000
Fiscal year 1959	400,000

Emphasis will be given to development of instrumentation and controls required in the following applications:

(1) Startup, operation, and shutdown of reactors. Work will continue and new concepts will be investigated.

(2) Processing of radioactive fuel elements and residues.

(3) New reactor systems involving extreme environmental conditions, such as high temperature and pressure, corrosive atmosphere, and high radiation flux.

A program of basic theoretical and experimental engineering research will go forward in order to identify common problems in reactor heat transfer systems. Heat transfer systems required for new reactor concepts will be investigated.

(e) Advanced testing and research reactors

Fiscal year 1958	$446,000
Fiscal year 1959	400,000

Involved here are studies of AEC needs for additional research and test facilities, conceptional design of such facilities, research and development in support of new concepts related to specific needs, and detailed design studies of such facilities. During fiscal year 1959, conceptual design will be started on a test reactor (AETR) for testing materials and fuel elements under fast flux conditions (10^{16} neutrons per square centimeter) and additional work will be undertaken in support of those new research and test reactor concepts which have shown the most promise.

(f) Manuals and data books

Fiscal year 1958	$107,000
Fiscal year 1959	0

The work on manuals and data books will be completed in fiscal year 1958 since this program is now up to date. Additional manuals and data books may be required in the future based on anticipated advances in reactor technology.

3. Applied fuel cycle development, $13,000,000.

The fuel cycle development program will be initiated in fiscal year 1959 and has as its basic objectives the reduction of nuclear power costs through an aggressive development program. This program will extend from materials and process development through the actual testing of multiton batches of developmental fuel elements in full-scale power reactors. To accomplish this, the Commission's fuel cycle development program will be expanded and specific attention will be directed toward the development, fabrication, and testing of large numbers of fuel element types suitable for test operation in the various power reactors scheduled to be in operation after fiscal year 1960. The fuel cycle development program will be carried out through arrangements with a number of industrial concerns and at AEC laboratories. In the past years some work similar in nature has been carried on in conjunction with the reactor development work. Development of fuel materials will be directed primarily toward materials of special

significance to classes of reactors which have developed into firm projects, with the objective of accelerating the development of materials and techniques which will lead to higher performance and/or lower cost fuel elements for these reactors. The proposed projects would supplement present efforts with particular attention to oxides and other cermet materials containing uranium, thorium, and plutonium in forms suitable for use in these firm projects.

Effort will be aimed at the development of new fuel element designs which would result in improved performance when used in those full-scale reactors now under construction or firmly planned. The initial work will result in the development of prototype fuel elements which could subsequently be produced in large numbers for test in full-scale power reactors. It is planned to enter into contracts with power reactor operators to test these elements. Funds for these contracts are included in the unapplied resources portion of the AEC budget. Consideration will be given to improved manufacturing techniques and to inspection and testing procedures which can result in lower costs in the subsequent production of fuel elements of the type being developed. It is planned to enter into contracts with commercial organizations which have competence and facilities in the fuel element field and at the same time increase effort at existing AEC installations.

4. Reactor safety, $7,600,000

	Fiscal year 1957	Fiscal year 1958	Fiscal year 1959
(*a*) In-pile systems development	$1,949,146	$5,130,000	$2,800,000
(*b*) Out-of-pile development	1,371,568	1,738,000	3,800,000
(*c*) Fast reactor safety program	261,529	1,681,000	1,000,000
Total	3,582,243	8,549,000	7,600,000

The reactor-safety program is aimed at developing information pertinent to achieving, in reactors, maximum safety at minimum cost. The testing of different design reactor systems is required to generate information needed to insure stability of reactor operation and to determine more fully the dynamic behavior of reactors when subjected to both sudden and slow changes in reactivity. Work in this program must proceed at a high level of effort during fiscal year 1959 in order to meet the demands of an expanding reactor industry.

(a) In-pile systems development

Fiscal year 1958	$5,130,000
Fiscal year 1959	2,800,000

This activity will include destructive tests by in-pile melt down of a fuel element subassembly in order to provide needed data on chemical-energy releases under excursion or loss of coolant conditions. This information is required for safe fuel-element design and in order to achieve a proper balance between safe and economical reactor containment. The transient reactor test program to include reactor types not covered under the existing transient test series will be required. Present facilities at SPERT I, II, and III and KEWB permit tests of pressurized and unpressurized water cooled and moderated reactors and aqueous homogeneous water boilers. Operation of SPERT I and KEWB facilities will continue in fiscal year 1959. In fiscal year 1958, SPERT III was essentially completed, and SPERT II will be completed early in fiscal year 1959.

Studies will indicate whether or not certain of the existing facilities can be used for tests on boiling-water reactors and organic-moderated reactors. A study is also underway to determine the transient testing needs for sodium-cooled, liquid-metal-fueled, and gas-cooled reactors.

(b) Out-of-pile development

Fiscal year 1958	$1,738,000
Fiscal year 1959	3,800,000

Major emphasis in this part of the reactor safety program will be placed upon reactor containment and chemical reaction studies, and upon a theoretical analysis and understanding of observed phenomena in transient and other reactor safety programs. These activities should be vigorously pursued not only to determine safe design criteria, but also to provide data which will allow for more economical containment. This effort includes work on reactor core vessels, outer con-

tainment, blast shields, blast effects as related to time histories of energy releases, underground construction, and natural hazards such as earthquake damage. Effort will be expended on chemical reactions work, metal-water reactions, metal-ignition studies, and experiments on fission products that would be released from melting or burning of fuel elements. The out-of-pile program will also include work on reactor fuses, theoretical reactor kinetics, and the safety aspects of control systems.

(c) Fast reactor safety program

Fiscal year 1958	$1,681,000
Fiscal year 1959	1,000,000

The fast reactor safety program concentrates on the two central problems in fast reactor safety, namely, reactor stability and estimation of the maximum possible nuclear accident. The major part of this work is being done by the Argonne National Laboratory in close cooperation with the Los Alamos Scientific Laboratory.

A major emphasis has been on the design, development, and fabrication of the transient reactor test reactor (TREAT) which is required to test fuel elements and subassemblies. This experimental reactor was designed to provide a power excursion which will melt the test elements, thus providing data for the analysis of meltdown problems. Fabrication is to be essentially completed in fiscal year 1958 and the experimental meltdown tests will begin in fiscal year 1959.

Detailed studies will continue on the effects which core meltdowns may have on the yield of a nuclear incident, on the kinetics of ignition or reactor metals, and on reactor containment studies.

5. Separations systems development, $11,000,000

	Actual, fiscal year 1957	Estimate, fiscal year 1958	Estimate, fiscal year 1959
(a) Aqueous chemical processing development	$3,177,091	$2,504,000	$2,800,000
(b) Volatility processing development	934,442	1,338,000	1,500,000
(c) Pyrometallurgical processing development	2,666,982	3,539,000	3,800,000
(d) Waste treatment development	783,676	995,000	1,000,000
(e) Waste disposal development	1,319,353	2,099,000	1,900,000
Total	8,881,544	10,475,000	11,000,000

Separations systems development programs are directed toward obtaining design criteria on chemical systems for the reprocessing of irradiated reactor fuels. Current estimates indicate that a significant portion of nuclear power costs will be incurred for this function. At present, no proven technology exists which promises greater economies and which can be applied to the heavy volume of spent fuel loads forecast for civilian power and military reactors. During fiscal year 1959, development efforts will be pointed toward pilot plant proof of promising chemical systems.

(a) Aqueous chemical processing development

Fiscal year 1958	$2,504,000
Fiscal year 1959	2,800,000

Major goals are to develop and prove the mechanism for fuel dissolution, to develop improved extraction process methods and data, and to continue development of reprocessing chemistry applicable to multicomponent fuel compositions.

Developments of the Zircex and Darex processes for treating zirconium and stainless steel fuels will be continued on both laboratory and engineering scales to determine reaction rates, product losses, heat dissipation, behavior of fission products and plutonium, and to find optimum materials of construction. General laboratory studies will be continued on alternate aqueous processes. Work on fuel handling and mechanical processing systems will be continued.

Data will be obtained on dissolution rates of various fuels in sulfuric-nitric acid systems. Corrosion behavior of such systems built of several materials on construction is to be evaluated.

Studies in the application of ultrasonic techniques to aqueous reprocessing operations will be continued. Application of ultrasonics in nonaqueous chemical reprocessing will also be considered.

(b) Volatility processing development

Fiscal year 1958	$1, 338, 000
Fiscal year 1959	1, 500, 000

General development of the volatility technology approach which involves use of sodium fluoride absorption beds for recovery of uranium hexafluoride will be continued. Additional operational testing of the fused salt volatility pilot plant located at Oak Ridge will be conducted using fused salt feed which has been spiked to a higher level of radioactivity than that experienced in processing the aircraft reactor experiment (ARE) fuel. The pilot plant will then be modified to permit processing of short-cooled fused-salt fuels and of solid metalic fuel elements. Laboratory development and design work will be conducted to supplement this program.

General development will be continued also on another aspect of volatility technology in which uranium is fluorinated to the volatile UF_6 and purified by fractional distillation. Major emphasis will be placed on the development of technology for the recovery of plutonium by volatility processes, and on the development of corrosion resistant construction materials.

(c) Pyrometallurgical processing development

Fiscal year 1958	$3, 539, 000
Fiscal year 1959	3, 800, 000

The pyrometallurgical program will include scaled up engineering, design and evaluation in order to optimize the process for specific application to EBR–2. A second major goal is to devise and laboratory-test new flow-sheets for special alloy and ceramic fuels.

Major goals in the work being performed by North American Aviation are optimization of technology as applied to the sodium reactor experiment (SRE) slightly enriched uranium fuel, development of criteria for pyroprocessing refabrication experiment (PRE) cell and equipment design and mockup, and the continuation of engineering development on methods of pyrochemical processing of thorium-uranium and uranium dioxide-ceramic fuels.

Work will also be continued in the development program at Iowa State College, which is aimed at basic development of pyrochemical technology.

(d) Waste treatment development

Fiscal year 1958	$995, 000
Fiscal year 1959	1, 000, 000

Major goals are to provide preliminary design data for the aluminum nitrate calcination process, to provide scale-up data and further design information for the initial waste solids storage facility, and to complete the calcination and waste storage process studies. The primary effort in waste calcination studies is in support of the Idaho chemical processing plant program. Major goals are to determine, through operation of the ANL hot pilot facility, the course of fission products in the process and to adapt the process to other types of radioactive wastes.

The generation and removal of entrainment from evaporative systems will be studied over a wide range of design and operating variables. This will be a fundamental study which will develop information of value to the design of boiling water reactors, feed water boilers for water cooled reactors, radiochemical evaporators, and waste evaporators.

(e) Waste disposal development

Fiscal year 1958	$2, 099, 000
Fiscal year 1959	1, 900, 000

Three basic situations underlie the current waste disposal development program: (*a*) Development work has indicated feasible methods for ultimate disposal of highly radioactive wastes, but no proven solution has been reached; (*b*) problems of environmental control are becoming more widespread and the need for quantitative environmental data and development information is more acute: (*c*) laboratory scale work must now be advanced to pilot plant and field scale experiments.

In fiscal year 1959, in high activity waste disposal systems, the transitions to pilot plant and field scale investigations will be required in order to evaluate engineering and environmental feasibility. Supporting laboratory development work will have to be continued. In waste dispersal and environmental control,

the geographical distribution of areas under study will continue to keep pace with requirements. Full-scale field investigations and model work where practicable, will be underway. Air cleaning research and development work will continue.

6. Commercial ship reactors, $4,400,000

	Fiscal year 1957	Fiscal year 1958	Fiscal year 1959
(a) Pressurized water reactors	0	$360,000	$1,700,000
(b) Maritime gas cooled reactors	0	780,000	1,750,000
(c) Development of health, safety and operating rules and regulations	0	244,000	250,000
(d) Advanced systems development	$875,198	665,000	700,000
Total	875,198	2,049,000	4,400,000

In fiscal year 1957, the AEC and the Maritime Administration started a program to demonstrate the general practicality of nuclear powered merchant ships and to develop nuclear ship propulsion systems which could compete economically in world trade. The program set forth below is based on a logical step-by-step approach to program objectives; from the technical and economic standpoint, development of operating data, development and improvement of nuclear plant components, plant and environmental safety and development and test of promising reactor systems in merchant ships is required; from a nontechnical standpoint, work is required in the regulatory procedural, and labor fields to pave the way for entry of nuclear ships into normal foreign and domestic commerce.

(a) *Pressurized water reactor*

Fiscal year 1958 ..... $360,000
Fiscal year 1959 1,700,000

Under Public Law 848, the 84th Congress authorized the construction of the first nuclear-powered merchant ship, the nuclear ship *Savannah*. The *Savannah* will be 595 feet long, develop 20,000 shaft horsepower, and will have a designed service speed of 20¼ knots. The ship is scheduled for operation in fiscal year 1960.

Since the short time scale for the project (39 months) does not permit utilization of a prototype, fiscal year 1959 operating support funds will be required to provide analysis and testing assistance in the areas of design review, metallurgy, and waste disposal. In addition, completion of an in-pile loop is required for testing of the first and subsequent improved core loadings.

In order to provide backup for the first core and, at the same time, capitalize on experience with the first core, funds are required to continue an engineering development program aimed at fabricating a second improved core to be completed early in the initial test and trial period.

(b) *Maritime gas-cooled reactors*

Fiscal year 1958 ..... $780,000
Fiscal year 1959 1,750,000

Studies to date indicate that a high temperature gas-cooled reactor with a closed-cycle gas turbine offers great promise for eventual low-cost propulsive power for merchant ships from a compact plant of relatively light weight. A cooperative AEC-MA program to develop this system was started in fiscal year 1958. The development of the reactor and associated components will be AEC-funded; the turbomachinery, MA funded. General Atomics is the prime contractor for both agencies.

In fiscal year 1958 and continuing through fiscal year 1959, the contractor will establish a preliminary design for the system; perform core physics experiments; test and develop appropriate coolant, moderator and structural materials; design and fabricate initial fuel elements for temperature, pressure and irradiation testing; and develop economic fabricating techniques. The program will require approximately 100 scientists, engineers, and technicians in fiscal year 1959, to sustain the proposed level of effort which is based on achievement of an operating prototype within 5 to 7 years. The program level was designed in terms of orderly development effort and in terms of major technical problems. A gas-cooled loop will be completed in fiscal year 1959 at Hanford to provide for testing of fuel elements.

(c) Development of health, safety, and operating rules and regulations

Fiscal year 1958	$244,000
Fiscal year 1959	250,000

To insure safe operation and to achieve foreign and domestic acceptance of the first and subsequent nuclear powered merchant ships, work was initiated in fiscal year 1958 in the field of nuclear ship operations, health physics, and ship propulsion plant safety. The fiscal year 1959 program will stress work on ship damage studies involving the reactor plant, fuel handling problems, disposal of low-level radioactive wastes at sea and parametric investigations to determine optimum plant and shielding layout in terms of exposure of crews and passengers. In addition, work on the establishment of safety criteria and the preliminary design of shoreside fuel handling, maintenance and repair facilities will be completed.

(d) Advanced systems development

Fiscal year 1958	$665,000
Fiscal year 1959	700,000

In fiscal year 1958, studies were completed which indicated that several reactor systems have long-range technical and economic promise for utilization in nuclear merchant ships. The boiling-water system was one of those studied, the conclusion being that it can now be engineered to achieve substantially lower power costs that can be expected from the nuclear ship *Savannah*. As a consequence the Maritime Administration and the AEC are proceeding with the engineering development of a boiling water reactor system for application to a large tanker. AEC's responsibility in this program is to proceed with necessary research and development work aimed at resolution of engineering problems to be encountered in maritime utilization of the system. The work will be useful not only for the projected large tanker but, also, will be of basic importance to the American merchant marine in its efforts to improve its competitive position in world trade.

In fiscal year 1959, the work will include analyses of system control, structural, and material problems, and resolution of reactor physics problems involved in reactor operation under pitch-and-roll conditions. Critical experiments, reactor and component mockups, and metallurgical and heat transfer work will be done in fiscal year 1959. If carried forward, the ship schedule calls for completion and start of operation by the Maritime Administration in fiscal year 1961.

7. Army package power reactors, $8,600,000

	Actual, fiscal year 1957	Estimate, fiscal year 1958	Estimate, fiscal year 1959
(*a*) Pressurized water reactor systems	$715,105	$871,000	$1,300,000
(*b*) Boiling heterogeneous reactor systems	403,128	527,000	300,000
(*c*) Gas-cooled reactor systems	1,497,596	4,081,000	6,300,000
(*d*) Food irradiation reactor	88,726	56,000	0
(*e*) Advanced reactor studies	171,000	275,000	700,000
Total	2,875,555	5,810,000	8,600,000

The objective of this program is the development of a family of reactor systems to fulfill military requirements for package powerplants for use in remote areas and for uniquely military purposes. To meet this objective, reactor concepts which show promise of fulfilling military requirements must be studied and evaluated. Four general reactor concepts are under development into military reactor systems: (1) pressurized-water heterogeneous reactors, (2) boiling-water heterogeneous reactors, (3) gas-cooled reactors, and (4) advanced compact reactor systems.

(a) Pressurized-water reactor systems

	Fiscal year 1958	Fiscal year 1959
Total	$871,000	$1,300,000
Research and development	791,000	1,150,000
Fuel fabrication	25,000	0
Test operations	55,000	150,000

In fiscal year 1959, efforts on pressurized-water systems will include operation for 12 months of the Army package power reactor (APPR–1), a 10-megawatt (reactor heat) plant designed to supply power and heat at remote military bases with strengths of 150–300 men. Following completion in fiscal year 1958 of an extensive zero-power test program on APPR plate-type fuel elements and on tubular fuel elements, and an effort to improve control elements, improvements will be proof tested in operating plants insofar as is possible in fiscal year 1959. The fiscal year 1959 effort will include, also, studies of means to obviate buildup of long-lived activity in the primary system components, and means to increase reactor power output, e. g., nucleate boiling.

To fulfill a known requirement by the Army for a plant of 4–6-megawatt (electrical) capacity for use in a classified application, the Commission began work in fiscal year 1958 on a core which would increase the power rating of an APPR–1 type plant by a factor of 2.5 while retaining a full-power core life of 1 year. The core specifications are required by the Army by January 1960 for use in an APPR-type plant for which the Army began powerplant design and development in fiscal year 1958. The fiscal year 1959 effort involves design and analysis of the core and the central system, metallurgical development, critical experiment investigations, and irradiation testing of samples and core elements, both in pile and out of pile.

In response to an Air Force requirement received in mid-fiscal year 1958, the AEC will develop and procure a 1-megawatt (electrical), prepackaged nuclear plant designed for rapid erection and operation at remote sites. This project (Army package reactor No. 2) is included in the fiscal year 1959 authorization bill at a cost of $3 million for the nuclear portion of the plant. The DOD will fund for the conventional portion. Fiscal year 1959 core work will involve national laboratory charges for the preparation and testing of fuel samples, test reactor space rental, specialized fuel evaluation services, and Government-furnished services in the initiation of core procurement.

(*b*) *Boiling heterogeneous reactor systems*

	Fiscal year 1958	Fiscal year 1959
Total	$527,000	$300,000
Research and development	338,000	150,000
Fuel fabrication	178,000	0
Test operation	11,000	150,000

In fiscal year 1959, the primary effort on boiling heterogeneous reactor systems will be directed toward the test operation and modification of a prototype low-power (approximately 3-megawatt heat) reactor, known as the Argonne low-power reactor (ALPW), and intended to provide the basis for plans for field units optimized for use in small military installations located in remote Arctic areas. This prototype will also serve as a training facility for military operators. The research and development effort in boiling heterogeneous systems will be directed toward the improvement of fuel configurations and control devices, all aimed at improving plant reliability, economy, and utility; also, toward simplification of plant design for subsequent field units, and a determination of the maximum power of which the core is capable.

(*c*) *Gas-cooled reactor systems*

	Fiscal year 1958	Fiscal year 1959
Total	$4,081,000	$6,300,000
Research and development	2,888,000	3,636,000
Fuel fabrication	0	390,000
Experiment fabrication	1,193,000	2,274,000

A gas-cooled reactor experiment (GCRE), fabrication of which was initiated in fiscal year 1957, will be near completion in fiscal year 1959. Experiments with the first core configuration will continue. The design of the second core will be completed, and fabrication will be in process. In-pile dynamic loops at Oak

Ridge National Laboratory, Battelle Memorial Institute, and the national reactor testing station, completed and operating in fiscal year 1958, will continue to be operated in fiscal year 1959 to test materials for radiation stability, corrosion resistance, and strength. Modifications of one or all loops will be carried out to extend operational ranges as required by advances made. Starting in fiscal year 1959, this gas-cooled program will be oriented beyond the GCRE toward a useful military device. Accordingly, work will be initiated on a solid moderated (dry) core, which offers the most promise for practical military applications; also, preparations will be made for mating the GCRE to a gas-cooled turbine under development by the Army.

(d) Food irradiation reactor

Fiscal year 1958	$56,000
Fiscal year 1959	0

Research and development to support the construction of a food irradiation reactor was terminated in fiscal year 1958, and no work is planned in connection therewith in fiscal year 1959 since the DOD has indicated this work will be done by using cobalt irradiation.

(e) Advanced reactor studies

Fiscal year 1958	$275,000
Fiscal year 1959	700,000

Continuous evaluation of advanced reactor concepts to determine adaptability of results of package reactor systems for foreseeable long-range requirements represents an important phase of this program. Studies planned include investigation of very low power (less than 100 kilowatts electrical) compact reactor systems capable of airdrop and/or unattended operations and continuation of work initiated in fiscal year 1958 on an advanced compact reactor suitable for highly mobile sources of electrical power and for propulstion of large land vehicles. Design of an initial low-power reactor experiment (Army compact reactor experiment I; ACRE–I) initiated in fiscal year 1958 will be completed in fiscal year 1959. The study effort will be directed toward preliminary investigations of special problems related to the reactor concept selected, systems, analyses, and materials testing.

8. Naval propulsion reactors, $91,400,000

The objective of this program is the design and development of a group of naval nuclear-propulsion plants in a wide range of power ratings for use in surface vessels and submarines.

The program contains development of specific reactors for naval propulsion plants; research effort to evaluate new concepts that may produce higher performance and special-purpose powerplants for naval vessels; operation of a testing facility which will contribute to the technology of all water-cooled reactor plants; and operation of an expended core facility to receive, store, and examine spent cores of the pressurized-water type. The specific reactor projects constitute a program by the Atomic Energy Commission and the Department of the Navy.

The increased fund requirements in fiscal year 1959 result from expansion of development work on specific nuclear-propulsion plants for both submarines and surface vessels.

9. Aircraft propulsion reactors, $100 million

The aircraft propulsion reactor program is directed toward the fabrication and testing of nuclear reactors suitable for use in an aircraft propulsion system. Research and development on other components of the propulsion system is covered by Air Force contracts. The application of nuclear power to the propulsion of missiles and satellites is also being studied.

The fiscal year 1959 estimate provides for continuation of the research and development program, the fabrication and operation of experiments, and operation of the ground test facilities at the national reactor testing station.

10. Controlled thermonuclear project (Project Sherwood), $39,140,000

Research and development leading to the controlled production of power by fusion of hydrogen isotopes is being conducted at four major laboratories, since there are several basic approaches whose relative merits cannot yet be clearly distinguished. The four major laboratories are Princeton University, Oak Ridge National Laboratory, Los Alamos Scientific Laboratory, and the University of California Radiation Laboratory, both at Berkeley and Livermore. In addition,

supporting work is underway at New York University, the Naval Research Laboratory, and several universities and industrial companies.

The problem is to heat deuterium gas or a deuterium-tritium mixture to a temperature of the order of 100,000,000° C., and to confine this gas long enough for considerable fusion reactions to occur when the energetic ions collide, with a consequent release of nuclear energy. In all cases under investigation magnetic fields are used to confine the hot gas or plasma.

The four basic approaches are as follows:

(1) *Pinch and collapse* (*Los Alamos and Livermore*).—In the pinch and collapse approach a high-current discharge produces its own strong magnetic field. This field, in turn, rapidly pushes the discharge into a narrow channel and the compression of the gas raises it to an extreme temperature.

(2) *Mirror method* (*Livermore*).—In the mirror method ions are injected into a magnetic field provided by currents in large coils. This magnetic field is shaped as though it were a bottle open at both ends to provide for entry of the ions; once the ions enter the bottle, a variety of methods can be used to compress them.

(3) *Stellarators and related devices* (*Princeton*).—These endless devices, sometimes shaped like figure "8's," have curious magnetic fields. Eventually these fields are expected to confine the plasma on a continuous basis, but present stellarators operate on a pulsed basis for the sake of economy. Initial heating of ions is done by first passing a current through the plasma, and then applying a varying magnetic field, which shakes the gas very vigorously.

(4) *Hot-ion trapping method* (*Oak Ridge*).—This method employs the injection of very energetic molecule-ions. The molecule-ions are broken up into atomic-ions and neutral atoms by collision with an electrical discharge. The atomic-ions are trapped in the machine by mirror coils. The injected ions are already at energies larger than those necessary for efficient nuclear reaction. The problem is to confine them and use them for heating gas in order to bring the power production up to useful levels.

All four techniques are advancing rapidly. Machines in operation at Los Alamos Scientific Laboratory, Oak Ridge National Laboratory, and the University of California Radiation Laboratory have been designed to reach thermonuclear temperatures. If they do not, their operation should point the way to reasonable modifications and further progress. The main problems are connected with instability of the plasma; however, in the last 2 years, steady progress in the control of instabilities has been made.

A comparison of the levels of effort at the several sites for fiscal years 1958 and 1959 is as follows:

	Fiscal year 1958	Fiscal year 1959
Los Alamos Scientific Laboratory	$3,000,000	$4,600,000
University of California Radiation Laboratory	6,500,000	6,900,000
Oak Ridge National Laboratory	3,500,000	4,800,000
Princeton University:		
Model C	1,300,000	13,000,000
Other	4,450,000	5,000,000
Washington	1,250,000	4,840,000
Total program	20,000,000	39,140,000

At Los Alamos, work will be concentrated on pinches operating in a few microseconds. Work may also be done on pinches in large tubes, operating in milliseconds. For both purposes, additional condenser capacity will be needed. The increase of $1,600,000 planned for fiscal year 1959 at Los Alamos provides for procurement and installation of a very large condenser bank and the necessary switchgear.

At Oak Ridge, injection of large ion currents at voltages up to 600,000 is leading toward installation of new power sources in early fiscal year 1959. Work with the present direct-current mirror machine should lead to design of a better device in fiscal year 1959. In addition, study of materials begun in fiscal year 1958 will continue. The increase of $1,300,000 planned for fiscal year 1959 at Oak Ridge provides for an increase in the scientific staff of 10 man-years ($400,000), additional power supplies and diagnostic equipment ($400,000), cost of removing equipment from the present inadequate and crowded quarters in Building 9204–3 and reinstalling in Building 9201–2 ($375,000), and initiation of preliminary design of a

device known as Orion, a high energy injection device larger and more versatile than DCX ($125,000).

At Princeton, existing stellarators are being used to provide design data for a large device called model C. Definitive design and fabrication are underway. Allis-Chalmers and RCA jointly provide industrial support for the complete design, fabrication, installation, and test of model C. The device and associated energy storage, pulsing equipment and related mechanical equipment, estimated to cost a total of $26 million in the period fiscal year 1958–60, are budgeted under the "Operating expenses" appropriation. An increase of $12,250,000 in fiscal year 1959 at Princeton provides for procurement and fabrication of the model C device and associated equipment ($11,700,000), and increased effort in the work with existing stellerator devices ($550,000). Construction of laboratories, office space, and housing for the model C device are provided under construction project 58–e–6, Project Sherwood Plant.

The University of California Radiation Laboratory's prime effort is located at the Livermore site with supporting work conducted at Berkeley. The UCRL program is divided along several lines of effort including mirror machines and pinch and collapse approaches. There have been continuous improvements in the capabilities of three types of mirror machines: Toy-Top, Table-Top, and Felix. Two of these are approaching thermonuclear temperatures. The collapse work has advanced in technique. The pinch work may also yield thermonuclear temperatures, using tubes quite different from those employed at Los Alamos. The increase of $400,000 planned for fiscal year 1959 at UCRL provides for increased effort in the pinch approach at Livermore and some increase in the general support work including basic plasma physics.

The increase of $3,590,000 planned for fiscal year 1959 under the Washington portion of the Sherwood budget provides for additional research and development effort both at university sites and with industrial groups ($590,000) and for more rapid advancement of certain lines of effort that may prove warranted as a result of technological progress ($3 million).

There is also included in the "Change in selected resources" section of the budget an amount of $6 million which can be used to exploit a breakthrough should this take place in fiscal year 1959.

11. All other, $21,570,000

Included in this category are the nondistributed costs of the materials testing reactor, and engineering testing reactor, and the operation of the national reactor testing station, that portion of the chemical processing plant at Idaho related to the reactor development program and such other costs as startup and standby, transportation and security shipment and equipment.

	Fiscal year 1957	Fiscal year 1958	Fiscal year 1959
(a) Operation of test reactors	$1,015,553	$2,500,000	0
(b) Chemical processing plant	1,707,657	370,000	$750,000
(c) Operation of national reactor testing station	33,953	205,000	400,000
(d) Startup and standby costs	243,428	777,000	400,000
(e) Transportation and security shipments	134,360	174,000	220,000
(f) Equipment not included in construction	17,754,940	17,849,000	19,800,000
Total	20,889,891	21,875,000	21,570,000

(a) Operation of test reactors

	Actual, fiscal year 1957	Estimate, fiscal year 1958	Estimate, fiscal year 1959
Materials testing reactor:			
Gross cost of operation	$4,284,091	$4,100,000	$4,100,000
Less irradiation services to other programs	4,284,091	4,100,000	4,100,000
Net cost	0	0	0
Engineering test reactor:			
Gross cost of operation	1,017,731	3,500,000	3,600,000
Less irradiation services to other programs	2,178	1,000,000	3,600,000
Net cost	1,015,553	2,500,000	0

The materials testing reactor and the engineering test reactor operate to provide high flux for research purposes for various AEC contractors, AEC-sponsored and public groups in the study of radiation damage; to assist with fundamental research on transuranic and other elements; to aid in the development of fuel elements for various types of reactors; to produce isotopes; and to provide a source of neutrons for cross-section measurement work. The cost of these services is charged to users of the services, and there are, therefore, no costs shown here. In fiscal year 1958, most of the engineering test reactor costs were not distributed to the using programs since experimenters were preparing their experiments for insertion into the engineering test reactor. In fiscal year 1959, all costs will be distributed to the users.

(b) Chemical processing plant

	Actual, fiscal year 1957	Estimate, fiscal year 1958	Estimate, fiscal year 1959
Gross cost of operation	$3,737,492	$3,910,000	$4,350,000
Less revenues	134,357	225,000	275,000
Less cost distributed to other programs	1,895,478	3,315,000	3,325,000
Net cost	1,707,657	370,000	750,000

This is a continuing activity and provides for the routine operation of the chemical processing plant at the national reactor testing station in Idaho to recover enriched uranium from irradiated fuel elements. Operating costs are distributed among programs on the basis of quantity of material to be processed, kinds of material, length of time required for processing, and expense of decontamination and cleanup. The increase in operating cost in fiscal year 1959 is primarily for chemicals to be used during product processing. In fiscal year 1959, the fuels processed will be primarily for the special nuclear materials program. Only the costs chargeable to the reactor development program are budgeted here.

(c) Operation of the national reactor testing station

	Actual, fiscal year 1957	Estimate, fiscal year 1958	Estimate, fiscal year 1959
Gross cost of operation	$3,679,337	$4,270,000	$4,725,000
Less distribution credits	3,645,384	4,065,000	4,325,000
Net cost	33,953	205,000	400,000

This activity is for operating and maintaining the national reactor testing station. The costs are distributed to the programs using the services of the station. The increase in operating costs is for related communications and transportation costs.

(d) Startup and standby costs

Fiscal year 1957	$243,428
Fiscal year 1958	777,000
Fiscal year 1959	400,000

This category provides for the startup and standby of certain special reactor materials production facilities and related termination costs. Fiscal year 1958 costs were for termination of the contracts associated with the production of yttrium. Fiscal year 1959 costs are for maintaining the Luckey plant in standby and for related costs associated with berllium contracts.

(e) Transportation and security shipments

Fiscal year 1957	$134,360
Fiscal year 1958	174,000
Fiscal year 1959	220,000

This estimate is for coordinating, escorting, and providing armed protection for shipments of highly classified materials and documents, as well as materials that cannot be transported by common carrier because of health and safety hazards.

(f) Equipment not included in construction, $19,800,000

Equipment requirements for the reactor development program are estimated at $19,800,000 for fiscal year 1959. This requirement is to support the continued growth in the program for development of civilian and military reactors. Approximately two-thirds of the amount requested is required to support the aircraft propulsion reactors program and the naval propulsion reactors program. The other major requirements is for the civilian power reactor program, which is increasing in fiscal year 1959.

There follows a breakdown of the total equipment costs, indicating amounts estimated for each major installation in relationship to its other operating costs under this program.

[In thousands]

Installation	Other operating costs	Equipment costs
Lockland, Ohio, plant, General Electric Co	$45,750	$3,850
Hartford, Conn., plant, Pratt & Whitney	16,000	1,000
Bettis Plant, Pittsburgh, Pa	61,400	4,300
Knolls Atomic Power Laboratory	31,900	2,200
Windsor, Conn., plant, Combustion Engineering Co	13,000	300
Argonne National Laboratory	21,039	1,515
Oak Ridge National Laboratory	34,012	1,032
National Reactor Testing Station, Idaho	12,210	876
Los Alamos Scientific Laboratory	23,722	1,425
Princeton University	18,000	650
All other	123,467	2,652
Total cost	400,500	19,800

Mr. RABAUT. The 1958 appropriation was $329,300,000. The request for 1959 is $420,300,000. The increase is $91 million. In your Government program, which is listed at the top of page 55, can you indicate which reactor concepts seem to hold the most promise at this time for economic nuclear-power production?

STATUS OF VARIOUS REACTOR CONCEPTS

Mr. FLOBERG. I will ask Mr. Davis to respond to your question in detail, Mr. Rabaut.

Mr. RABAUT. All right, Mr. Davis.

Mr. DAVIS. Mr. Chairman, of course, one of the reasons that we are pursuing a number of different approaches here is because we are not by any means certain which ones might be the most promising, in addition to the fact, of course, that there are many possible applications. I think we could say, at the present time, that the pressurized-water reactor and the boiling-water reactor and, probably, the organic-moderated reactor are probably at an advanced state of development so that they have the prospect of being economic under certain conditions within the relatively near future.

Some of the concepts, perhaps, to take the extreme in the other direction, such as the homogeneous reactor or fast breeder, are in the nature of advanced projects and it will be several years before they are in the same stage of development.

Mr. RABAUT. For which one do you hold the most promise?

Mr. DAVIS. I wish I knew the answer to that question, Mr. Chairman, but I do not know it.

Mr. RABAUT. If you had actually had to choose to drop some of them which would you drop?

Mr. DAVIS. That is a very difficult question. I do not believe I would be in a position to suggest dropping any of these at the moment.

Mr. RABAUT. I am not saying you should drop them, but I am saying where do they stand on the ladder of progress?

Mr. FLOBERG. That is almost like asking us which one of our children we would like to shoot first.

Mr. RABAUT. We are trying to see which one here we can really put an injection into and shove it on a little bit.

Mr. DAVIS. These reactors, of course, are in different stages of development today. As I have pointed out, the pressurized water, boiling water and organic moderated are now pretty well along in development.

Mr. RABAUT. We have heard the Commission praise them year after year. We are trying to find out which one should receive a little extraordinary attention.

Mr. DAVIS. This depends entirely on whether your goal is to achieve the best results in a short period of time or whether you want to try to achieve really cheap nuclear power in the fairly far-distant future.

Mr. RABAUT. I will pick one out for you and ask you a question about it.

PRESSURIZED HEAVY WATER REACTOR

You have here on this list on page 55, No. 9, pressurized heavy water reactor. Now, how would that be to push on a little bit in order that we might get into the competitive field in foreign countries?

Mr. DAVIS. This is being pushed, I think, at the present time about as rapidly as the technology permits. It is a reactor which we are particularly interested in very largely because it has a possibility of operating with natural uranium feed. However, I should stress very strongly that it will still be a much more economic reactor if it operates with a slight degree of enrichment. It probably will not be economic in the United States as a natural uranium reactor.

COMPETITION IN SALES OF REACTORS ABROAD

Mr. RABAUT. We are not talking about the United States. We are talking about getting into the competition and getting into the market with the rest of the world.

Mr. DAVIS. There is, of course, one feature of this and that is the reluctance to utilize enriched uranium because it requires buying material from the United States, might also extend to some extent to the fact that in a heavy water reactor they would have to purchase the heavy water from this country, at least to get started. So, it is not completely devoid of the necessity of United States supply.

Mr. RABAUT. What are we going to get into this competition with?

Mr. DAVIS. I think we are in this competition. I think we are going to come out very well.

Mr. RABAUT. I went over there last year and I said to myself, walking along one of those English streets in London, I hope we do not meet a Sputnik on this deal. They are planning on selling those reactors over there. We have to admit it. They are playing up to the other countries. They have such a cheap labor cost they have a big advantage in the smaller countries that are not going to wait for spiked or enriched uranium for one of these things. They will be so glad to get power they will take what they can get at hand.

I think England is playing up to that and rightfully so in the market competition.

Mr. DAVIS. The fact of the matter is, however, that the fuel for the reactors is cheap if not cheaper using enriched uranium. It is true that the British and other European countries are able to manufacture equipment for reactor plants at perhaps two-thirds of the cost of doing it in the United States. Regardless of this, the United States manufacturers are today prepared to sell reactors abroad at a lower price in dollars per kilowatt than are the British. In my mind, in view of the fact that there is this difference which the British recognize as well as we do indicates that we already have cheaper reactors than the British have.

Mr. RABAUT. How much subsidization do we have in it now?

Mr. DAVIS. None.

Mr. RABAUT. None?

Mr. DAVIS. Not in the capital cost.

Mr. RABAUT. Our manufacturers can undersell them?

Mr. DAVIS. Our manufacturers are quoting on reactors abroad at lower kilowatt dollars in general than the British.

Mr. RABAUT. Have we sold any?

Mr. DAVIS. We have not sold any yet. I do not believe the British have either.

Mr. RABAUT. Have the British sold any?

Mr. FLOBERG. There are some under contract.

Mr. RABAUT. Did not the British sell some to Italy?

Mr. DAVIS. The British have not yet signed a contract with the Italians for the actual construction of a power reactor.

Mr. RABAUT. How about the Japanese?

Mr. DAVIS. I do not believe they have actually signed a contract. They have asked for bids again. The Japanese have asked for bids several times. The bids are now due, I believe, in August of this year.

Mr. RABAUT. I will tell you what to do. You better look this over well and put in the record, what is going on in competition in the sale of reactors. You know we have a tremendous amount of money in this.

(The information referred to follows:)

In response to an invitation of Societa Elettronucleare Nazionale (SENN), 5 American firms, 3 British, and 1 French group submitted proposals, on April 30, 1958, for the design and construction of a 130–150 megawatt electrical nuclear power station to be located on a site south of Rome. These proposals are being reviewed by a group known as Project ENSI set up by the National Committee of Nuclear Research, on behalf of the Government of Italy, the International Bank for Reconstruction and Development and SENN. An elaborate plan of review and evaluation of the bids includes review by the AEC for the enriched uranium reactors and the UKAEA for gas-cooled reactors, reviews by an international board of experts and reviews by SENN and its consultants (1 American and 1 British firm). The review and evaluation process is now underway and award of a contract is expected sometime this September. This project probably represents the best one by which to judge the present competitive position of the American firms in the sale of power reactors abroad. Understandably the Commission does not have access to the bid prices of either the American or United Kingdom proposals. We have, however, obtained, through conversations with responsible individuals of the firms making the proposals and those connected with the Italian project, evaluation as to the "bare" figures submitted. These cost figures which we have obtained were not the result of a detailed analysis of the proposals and therefore do not necessarily represent the total cost to SENN for a particular reactor. The American proposals range from $220 per kilowatt to $315 per kilowatt. The proposals, however, were not to include the cost of the civil works (site preparation, general construction, etc.) since this was to be done under a separate contract to be awarded by SENN to an Italian firm. Based on what we understand to be a SENN estimate of the cost of this part of

the project, the total cost of a nuclear powerplant station would range, in the case of American proposals from about $265 to $375 per kilowatt. Based on our knowledge of the apparent bid price for the fuel for the American reactors we further understand that the cost of power ranges from 11 to 16 mills per kilowatt-hour with 4 of the proposals estimated to result in a power cost of less than 15 mills per kilowatt-hour.

From informal talks with persons connected with the evaluation of the SENN proposals we understand that the British and French proposals result in a total cost of power in the same range, namely 11 to 16 mills, as those for the United States type reactors. The capital cost of the United Kingdom reactors are somewhat higher than those offered by the United States firms but the fuel costs for the reactors is somewhat lower.

Mr. BUDGE. Mr. Chairman, I have a number of questions I intended to ask under the preceding title.

Mr. RABAUT. Will you let me finish this point I have here, and then I will yield to you.

Mr. BUDGE. Certainly.

CANADIAN WESTINGHOUSE REACTOR

Mr. RABAUT. I would like to ask a question about the Canadian Westinghouse A-power plant. This is a quote from the Wall Street Journal of January 29.

The Westinghouse Electric has completed design studies of a new type nuclear powerplant and is ready to negotiate with utilities for detailed designs and engineering development according to J. A. Tamaro, vice president. The study indicates such a plant could have an electric capacity up to 300,000 kilowatts. Assuming favorable financing terms, power costs of plants might be as low as 6.5 mills per kilowatt-hour. It is a good deal lower than for most other reactors. Less optimistic cost assumptions would boost the cost of power to 15 mills per kilowatt hour. Modern conventional generation stations in the United States produce power at a cost of 4 mills to 6 mills per kilowatt-hour depending on the cost of fuel. The new automatic reactor is not yet in production. Design studies call for natural uranium fuel cooled by heavy water, under pressures of 1,500 or thereabouts per square inch to carry the heat from the fission uranium to steam generators. Most other reactors use enriched uranium.

Now, what about that?

Mr. DAVIS. I thought I knew what they referred to until they mentioned the heavy water cooling. The Canadian General Electric has been doing some design studies recently on an organic-cooled heavy-water moderated reactor, and I thought it had made an announcement at about that time.

Of course, they have also been working with the Atomic Energy Company of Canada on the heavy-water moderated and cooled natural uranium reactor that they have been developing at their laboratory.

We are familiar with some of these estimates and believe that their capital cost estimates are quite low, at least for those which we have seen.

Mr. RABAUT. This was in the Federal Power Commission News Digest.

Mr. DAVIS. I believe we are familiar with the work that has been done on the heavy water reactor.

Mr. RABAUT. That points to what I am talking about now. We have to get into this competition.

Mr. DAVIS. May I point out that they have not yet built even an experimental reactor of this type.

SALE OF BRITISH REACTORS TO FOREIGN COUNTRIES

Mr. RABAUT. Here is another one in here, the same publication of the Federal Power Commission. This is the FPC new digest volume of November 26, 1957.

Italian nuclear powerplant contract awarded British firm.

Mr. DAVIS. To the best of my knowledge, there is a contract between what is called the AGIP Nucleare Company and the Nuclear Power Plant Company of the United Kingdom which calls for assistance in design studies.

I was in Rome last week and was told that the contract for the construction of this plant has not been signed.

Mr. RABAUT. That is the physical plant. What about the powerplant?

Mr. DAVIS. This is the powerplant; yes, sir.

Mr. RABAUT. Well—

Britain has landed its first big contract to export atomic power stations. The state-controlled oil company, Eni, awarded a contract for building a series of atomic power stations to a group of eight British firms known as the Nuclear Power Co., of London.

Mr. DAVIS. That is the Nuclear Power Plant Co.; yes, sir.

Mr. RABAUT. Is this true or not?

Mr. DAVIS. Mr. Rabaut, as I said I was in Rome a week ago. I was told that they had not yet signed a contract for the construction of that reactor.

Mr. RABAUT. We have to say that this is poor reporting in the New York Journal of Commerce under date of November 21?

If American industry is actually bidding lower than the British on a kilowatt basis, why is it that our costs in America are getting so high that the Government must put in more and more to get anything done in the atomic power business?

Mr. DAVIS. I think the situation in England is quite different than it is in the United States. On a comparable basis, power costs in the United Kingdom are about twice what they are in the United States.

Mr. RABAUT. I am not talking about the power cost. I am talking about this competition to sell power equipment.

Mr. DAVIS. I believe that our companies are in a position to compete abroad.

Mr. RABAUT. Did you not say that our companies were bidding lower in this equipment field?

Mr. DAVIS. In general, they are bidding lower on the cost of building the plant and the fuel costs are slightly higher and they come out with about the same overall power cost.

Mr. RABAUT. Why can their bids not be lower to the Government here if they are lower in competition?

Mr. DAVIS. The Government is not taking bids on large-scale power reactors of this sort.

Mr. RABAUT. Now, Mr. Budge, you wanted to ask something.

Mr. BUDGE. Yes, Mr. Chairman.

TRANSFER OF FUNDS TO UNITED STATES GEOLOGICAL SURVEY

I note in the Department of Interior supplemental request that we heard last week that the Geological Survey said that in fiscal 1958

they received from the Atomic Energy Commission $3,876,300 and the purpose of the transferred funds among other purposes was as follows—

to conduct basic research in fundamental geology and geochemistry of uranium thorium, and other elements of interest to the atomic energy program; to conduct geologic, geophysical, and geochemical studies on the problems relating to the testing of nuclear devices for peaceful purposes.

And it goes on here about the number of geologic factors.

What did you receive from the Goelogical Survey?

Mr. FLOBERG. I would like Dr. Williams to answer that question.

Dr. WILLIAMS. To briefly answer your question, so far as physical science, our definition of atomic research is generally restricted to the support of physics, chemistry, metallurgy, materials, and mathematics, and does not cover a field of physical science which is called geology and sometimes geophysics.

The work we are asking them to do, or collaborating with them to do, is covering this broad area of applied geology which normally is in the physical sciences, and we would otherwise ask other institutions or accept proposals from other institutions or companies to do this work. We have chosen to ask the Geological Survey people to carry on this because of the high quality of their personnel.

Mr. BUDGE. What have you received from them as of today?

Dr. WILLIAMS. They have performed researches, and they have reported results of great scientific interest to us.

Mr. BUDGE. Of what kind?

Dr. WILLIAMS. There are many kinds, sir. The basic problems of the behavior of radon, the nature of distribution, the character of the laying down of geologic strata, the manner in which uranium-bearing salts dissolve and are deposited in various places. We will be happy to provide information for the record.

Mr. BUDGE. Why did you not ask for money for this fiscal year for this purpose?

Dr. WILLIAMS. This money is included in our Chemistry Branch of the Division of Research. It is part of the Division of Research Chemistry Branch program, an item to support the Geological Survey.

Mr. BUDGE. The Geological Survey does not show in the 1959 fiscal funds.

Dr. WILLIAMS. They have made a request for us of the sum of $553,000. It is our intent to have the funds available and provide them with $478,000.

Mr. BUDGE. Will you furnish for the record a statement of all the funds you supplied other Government agencies, and the purposes for which they were furnished?

Dr. WILLIAMS. In the Division of Research? We will be happy to.

Mr. BUDGE. In all divisions.

Dr. LIBBY. We will do it for all divisions.

(The information requested follows:)

STATEMENT OF WORK TO BE PERFORMED BY OTHER FEDERAL AGENCIES IN FISCAL YEAR 1959 FOR THE AEC

Operating expenses

Department of the Army:	
Operation of plants: Picatinny Arsenal, Iowa Ordnance Plant, Burlington, Iowa; and Pantex Ordnance Plant, Amarillo, Tex	$32, 920, 000
Transportation, utilities, and other services	2, 279, 000
Civil Service Commission: Investigations	5, 119, 000
Federal Bureau of Investigation: Investigations	1, 366, 000
Department of the Navy: Research	7, 243, 000
General Services Administration:	
Building operation and maintenance, including guards	3, 210, 000
Purchase of solvent	1, 711, 000
Department of the Interior:	
U. S. Geological Survey: Fundamental research on geochemistry of uranium and water resources investigations	1, 152, 000
Bureau of Mines: Fabrication of weapons parts, production of special reactor materials, research on raw materials, and other related research	1, 500, 000
Department of the Air Force: Supplies and services	1, 250, 000
Department of Commerce:	
Bureau of Standards: Research in the fields of physics, chemistry, and metallurgy and research of biophysics and instrumentation	923, 000
Weather Bureau: Meteorological studies	578, 000
Other Federal agencies: Various services under miscellaneous orders	916, 000
Total	60, 167, 000

CONSUMERS PUBLIC POWER DISTRICT

Mr. RABAUT. Did you say we were not contracting for any reactors, large-size reactors?

Mr. DAVIS. Yes, sir.

Mr. RABAUT. What is this on page 55, Consumers Public Power District?

Mr. DAVIS. This is a fairly experimental reactor, not of the type that our companies are now bidding on. It is a 75,000-kilowatt reactor, whereas the ones I had reference to are 150,000- to 200,000-kilowatt reactors.

This is a negotiation which was started some time ago.

Mr. RABAUT. The point is, how can you bid so cheaply on big ones in foreign markets, and what is the price of these correspondingly?

Mr. DAVIS. The price of this reactor would be substantially higher than the price of these others, for two reasons. One of them is its size, which is less than half the size of a full-scale commercial plant. Second, this is an advanced type of reactor, and the first large plant of that particular type.

It is going to cost substantially more for this reason than later versions of the same reactor would cost.

Mr. RABAUT. On the cost, I asked before how we are underbidding the British on reactors. I want you to substantiate that in the record.

Mr. DAVIS. I should point out that much of the information we have is commercial information, not all of which we are at liberty to divulge.

Mr. RABAUT. It is public information?

Mr. DAVIS. No, sir. The bids on some of these projects are not public information.

Mr. RABAUT. What are they keeping them private for?

Mr. DAVIS. These are bids to concerns abroad. They are not transactions in which the Commission is involved.

Mr. RABAUT. On what basis, then, do you know what these prices are?

Mr. DAVIS. I have a general feeling about them from talking with some of the people.

Mr. RABAUT. A general feeling? That is a weak statement to make before the committee. You make a statement here that we can underbid them over there, and now you tell me you have a general feeling about the subject.

Mr. DAVIS. I have a fairly good notion about what some of these prices are. I know how they are comparing roughly with the bids that the British are making.

Mr. RABAUT. These people went so far as to print their stuff and make known their statements here in the News Digest, and they quote the papers from which they print this. For instance, the New York Journal.

You back your whole statement up with, "I have a feeling."

Mr. DAVIS. No, sir. I said I have some knowledge of what some of these prices are, based on discussions with the people making the proposal.

Mr. RABAUT. Whatever your knowledge is on that, put that in the record.

Mr. DAVIS. We will be glad to supply what we can.

(The information requested follows:)

1. To the best of our knowledge United Kingdom consortia have no contracts with either a foreign government or utility calling for the sale and/or construction of a nuclear power reactor.

2. Reports emanating from Japan and Italy have been misleading as to the sale of United Kingdom reactors. Actions may be taken in these countries which will result in the sale of United Kingdom reactors but to date no contract for the sale of a United Kingdom reactor has been signed.

3. In Italy the state-controlled Ente Nazionale Idrocarburi (E. N. I.) signed a contract on May 2, 1958, with the Nuclear Power Plant Co., Ltd. The contract, which is with the E. N. I. subsidiary, AGIP Nucleare, reportedly runs for 7 years and calls for such technical cooperation and assistance as is mutually agreed in E. N. I.'s program to construct by 1967 ten reactor power centers having a total capacity of 2,000 megawatts. Although it has been stated that the first reactor in the E. N. I. program will be constructed south of Rome, there is as yet no contract, to our knowledge, between E. N. I. or its subsidiary and the Nuclear Power Plant Co. for the sale and/or construction of a United Kingdom reactor.

4. The Japan Atomic Power Co. (a joint government-private enterprise) has requested tenders from three or four British consortia on an advanced gas cooled, natural uranium, 150 megawatt plant which it is considering for purchase. It is reported that the tenders are due July 31, 1958.

5. The only firm contract for the sale and construction of a power reactor that we are aware of is that between Westinghouse and the Belgian firm Societe Cooperative Electro-Nucleaire. This contract calls for the construction of a pressurized water type reactor of 11.5 megawatt (electric) capacity to be installed at the Mol Laboratory (Belgium) and to be in operation by the end of 1959.

6. There is a conditional contract signed on December 30, 1957, between Westinghouse and Societa Elettronucleare Italiana (Selni), more commonly referred to as Edisonvolta, for the sale and construction of a 134 megawatt (electric) pressurized water type reactor. The implementation of this contract is, at the moment, held up pending the establishment of a mutually acceptable cost for the fuel elements.

7. In Germany, General Electric in association with the German firm AEG was the successful bidder on a contract from RWE for the design and construction of a 15 megawatt (electric) experimental boiling water reactor.

8. Five United States proposals[1] were submitted in connection with the SENN request for tenders on a 130–150 megawatt (electric) nuclear powerplant. Three British and one French bids were also submitted on May 1, 1958. An award of a contract is expected in September.

9. American and British firms also submitted proposals for 100–150 megawatt (electric) nuclear powerplant this winter in response to the invitation of the Belgian firm Company Interescaut. We do not know when a contract award is expected.

10. The Japan Atomic Energy Institute issued invitations to some dozen American firms for bids on a 10 megawatt experimental reactor of the water type. The bids, believed due May 31, 1958, are expected to result in a contract sometime this fall.

11. In Canada, tenders were invited in 1955 from manufacturers in connection with the demonstration power reactor proposed by AECL and Ontario Hydro. An agreement was reached under which the Canadian General Electric Co. would do the design and construction of the 20 megawatt (electric) heavy water moderated and cooled, natural uranium oxide fueled reactor. This reactor, construction of which began early in 1957 and is scheduled for completion in 1961, is the prototype of a 200 megawatt (electric) plant under consideration by Ontario Hydro. No decision is to be made on the larger plant until 1961. Other than the small demonstration reactor, no firm plans have yet been made for the introduction of nuclear capacity into any electricity system in Canada.

12. About 6 months ago certain Canadian newspapers gave considerable coverage to a design study made on its own by Canadian Westinghouse. The reactor studied was very similar to the 200 megawatt (electric) plant under consideration by Ontario Hydro. The articles noted that Canadian Westinghouse had stated it could build this reactor in Canada and produce power for 6.5 mills per kilowatt-hour. The study apparently also indicated that the reactor if constructed elsewhere would probably produce power for approximately 12 mills per kilowatt-hour. To date no organization has accepted the implied offer of Canadian Westinghouse.

SALE OF REACTORS TO ITALY

Mr. JENSEN. Mr. Chairman, may I have a word?

The reactors it is reported England sold to Italy were gas-cooled reactors, were they not?

Mr. DAVIS. Yes, sir.

Mr. JENSEN. And England has put almost its entire emphasis on gas-cooled reactors. There is no question at all but what England has advanced further on gas-cooled reactors than we have. We have advanced further than England on water-cooled reactors. We have one in the *Nautilus* which has proved so satisfactory.

[1](1) Atomics International, Bechtel Corp., Montecatini; (2) H. K. Ferguson Co., Babcock & Wilcox Co.; (3) General Electric Co., Ebasco Services, Inc.; (4) Henry J. Kaiser Co., Westinghouse International Electric Co., and Ansaldo S. P. A.; (5) Mitchell Engineering, Ltd., A. M. F. Atomics, General Nuclear Engineering Corp. (Joint United States-United Kingdom proposal).

I can well understand how England could at this time undersell us or anybody else on gas-cooled reactors. Without a doubt we could undersell England on water-cooled reactors if water-cooled reactors were in demand.

Now my question is: Did Italy specify gas-cooled reactors exclusively? Or did they give us a chance to bid on our water-cooled reactors?

Mr. DAVIS. There are at least three different projects which are concerned here. The one which we have not mentioned is called the SELNE project, which is the Edison Volney Company of Northern Italy, which does have a contract of a conditional nature to buy a pressurized water reactor from the Westinghouse Corp.

Mr. JENSEN. The Westinghouse Corporation of U. S. A.?

Mr. DAVIS. Yes, sir; this is a pressurized water reactor.

Mr. JENSEN. Do they have a firm contract?

Mr. DAVIS. They have a contract, but it is subject to some conditions, not all of which have as yet been fulfilled. Some of these are internal conditions in Italy with respect to foreign exchange, financing, things of this sort. Presumably if all the conditions are fulfilled, this becomes a first contract to build a 134,000 kilowatt pressurized water reactor in northern Italy.

The second project, and the one which was referred to in the quotations from the newspapers, is a project of Nycorp, which is the Government-owned hydrocarbon corporation in Italy. They have had two subsidiary companies, one of them known as Samayo and the other is Ichitt Nucleari.

The Samayo was studying one type of reactor, and the AGIP Nucleare Co. was studying a gas-cooled British reactor. Recently they abandoned at least anything except further studies on the pressurized water reactor, which they are continuing, and have entered into negotiations with the two subsidiary companies now combined into the project of building the gas-cooled British reactor at a site 40 miles south of Rome.

The third project which is active at the moment is called the Senn project, which is a combination of some of the Government utility companies and some of the private companies.

They received bids from nine different companies, and in their invitations allowed either gas-cooled reactors of the British type or pressurized and boiling water reactors to be proposed.

There were 3 British proposals, 1 French proposal, all 4 of these on gas-cooled reactors. There were five proposals from American firms on pressurized, boiling water, and organic moderated reactors. One of these five was actually a joint proposal on a boiling water reactor between an American firm and British firm. These proposals are now being evaluated and they hope to make a decision some time in October or November.

Mr. JENSEN. Our manufacturers of reactors have not been counted out in the competitive field by any quirk of the imagination, have they?

Mr. DAVIS. No, sir. As I pointed out, they have what I would call a conditional contract in Italy. Further, they have 5 proposals out of a total of 9 in the Senn project which will be decided fairly soon, and which many of us are hopeful will result in an American reactor being built there.

Mr. JENSEN. Thank you. I just want to say, Mr. Chairman, that the United States manufacturers of power reactors have not been counted out of this business.

Mr. RABAUT. All I am asking is who can compete.

Mr. JENSEN. Mr. Davis has given quite a résumé of our interest in the furnishing of reactors.

TREND IN INDUSTRY ON REACTOR DEVELOPMENT

Mr. RABAUT. This is within the last year. It is a little ancient now, but I see where the Bell Aircraft Corp. of Buffalo, N. Y., laid off 29 of its 30 nuclear engineers last fall. This is November 4. General Electric released 100 employees in its atomic power equipment department. At the end of August, about 40 of them were engineers. Does that mean that some of these people are moving out of this field?

There is another statement I have which says there has been speculation that other companies also have been moving away from the idea of building reactors; Moorehead-Patterson, American Machine & Foundry Co. The president says his company is still in the atomic power business. He insists, however, it will not build atomic plants at a loss, which is of course understandable. Some others say they were going to build special parts for reactors.

Now, I was wondering, are these firms going into the specialized business of reactor parts instead of trying to develop whole reactors that we thought were going to be developed in this country? What is this trend?

Mr. DAVIS. So far as we are aware, most of the major companies that were in the business of supplying power reactors are still in it. I mentioned the Senn project in Italy and both A. M. F. and G. E. have made proposals on this project for large scale 150,000-kilowatt reactors. There have been some small companies who thought they could go easily into the business of building large scale reactors and thought they could undertake this on the basis of 29 or 30 engineers, and somehow get into this business. Quite a few of these have decided it is much more appropriate for them to make the parts and supply equipment for the people who are actually going to be able to build the full scale plants. There certainly has been a shift in this direction. The items you quote are from last October or earlier. I think you will find from talking to the people in the industry that while many of them were somewhat pessimistic about that time, most of them are more optimistic about it now.

Mr. RABAUT. They have had a change of heart?

Mr. DAVIS. I think you will find that many of them feel this way.

Mr. RABAUT. I was wondering how much of the money they are using is money that has been supplied to them.

Mr. DAVIS. I think we had a few small contracts with Bell, for example, but have not put any money into plants. The GE plant at San Jose is built entirely by the GE money and operated entirely by GE.

AMERICAN FOREIGN SALES POLICY

Mr. JENSEN. Mr. Chairman, you know this Uncle Sam of ours has to be kind to all his nephews around the world. If certain high officials of this Nation had their way, they would pass a law which would

provide that if the United States does not need the business that we should not take that away from other countries. When we dug 2,650 deep wells for India, for instance, the State Department specified the type and the design of the motor and all the equipment and even the well pipe. They specified that those well pipes had to have 11 threads. Our standard well pipe has 9 threads. So our well pipe manufacturers were counted out. They bought them from foreign countries. They specified a certain type of motor which was entirely foreign to the kind of motor that our United States manufacturers make, so they had to buy the motors from some foreign nation, after we furnished the money. They said, "Why, we cannot take the business away from the people around the world that need this business so badly." So I say again that no doubt if certain people in high places yet in this Government of ours had their way, they would say to the manufacturers of atomic energy reactors that we should not sell the atomic reactors any place in the world even though we sell them cheaper.

(Discussion off the record.)

WATER-COOLED REACTOR PROGRAM

Mr. JENSEN. You know what Mr. Rabaut and I decided after we had been in England inspecting these plants? We saw they were going forward quite fast on gas-cooled reactors. I think I can say this, too, that we decided that we should put greater emphasis on our water-cooled reactor program that we know is good, instead of scattering our shots too widely. I am quite sure that by elaborating on your water-cooled reactors with the know-how that you gentlemen have about the water-cooled reactor and all its intricacies, that you have the ability to develop a water-cooled reactor which will surpass anything in the world today if you put greater emphasis on that reactor and possibly not quite as much on some of these other experiments.

Mr. FLOBERG. I think the water-cooled effort is absorbing as much attention as it can absorb at this time. We are giving it a lot of emphasis. There is plenty of dispute among the experts as to the long-range future of water-cooled reactors, and I think that one of the strongest parts of the Atomic Energy Commission's reactor program is the diversified approach to this problem.

I might say that I think that opinion is just about unanimous among the experts in the field.

Mr. JENSEN. Do you feel that you are going as fast as is right and proper and feasible with the water-cooled reactor program?

Mr. FLOBERG. I don't know if it is as fast as is feasible, but we are putting a lot of effort into it and I would say that proportionate with the other techniques it is certainly getting its full fair share. This I would say is true of both boiling water and pressurized water. If you would like a more technical statement on that subject, I think Mr. Davis can give it to you.

"NAUTILUS" REACTOR

Mr. JENSEN. Now your *Nautilus* submarine has proved successful to the *n*th degree; has it not?

Mr. FLOBERG. It is a military vehicle and it satisfies the military requirement very well. I would say yes, as a submarine it is com-

pletely successful. One thing that must be remembered is that the economics of operating a submarine are not the most important factor in determining whether it is successful. Its ability to satisfy the military requirement is a test of its success. This is an expensive reactor to operate, but in view of the military advantage in operating it, I would say it is a complete success.

PRDC REACTOR AT MONROE, MICH.

Mr. RABAUT. In your cooperative program you show on page 64 that $900,000 is being spent on the PRDC reactor in 1958 under contract with the Power Reactor Development Co. Are these costs actually charged against this contract?

Mr. DAVIS. No, these costs are not charged against the contract, but are charged against the——

Mr. RABAUT. The answer is "No"?

Mr. DAVIS. That is correct.

Mr. RABAUT. What is the status of the safety question on this reactor?

Mr. LIBBY. I think I probably had better answer that, Mr. Rabaut.

Mr. RABAUT. All right.

Mr. LIBBY. The Commission has under advisement this argument and has not yet rendered a decision.

Mr. FLOBERG. This is in connection with the building permit.

RATE OF PROGRESS IN POWER REACTOR PROGRAM

Mr. RABAUT. All right.

What would you propose as a means of getting our own reactor program moving more rapidly?

Mr. LIBBY. I will be glad to try. I would like to have Mr. Davis try too.

Mr. RABAUT. Do you think it is moving as rapidly as it can go?

Mr. LIBBY. I think not, and I think we all agree that we could move more rapidly. I liked Mr. Jensen's emphasis on these more proven types. At the same time I would like to play around with some of these untried ideas, too. I think the best thing to do is to go forward with some kind of program similar to the one we have been arriving at in discussions with the Joint Committee, which is a well rounded, well balanced, sensible program. I think if we pursue this and we succeed in getting good men to work on the job, we just cannot fail. Now, the good men work in general for industry. Therefore, whatever we do, we must get the full cooperation of industry to the extent that they put their good men to work on the problem.

Mr. RABAUT. For the sake of the record, would more money in this program be helpful to you?

Mr. LIBBY. More money would help and we are asking for more money. It is money plus wisdom. Wisdom is one of the things we need most. I think these extensive discussions have given us a better look and a better idea as to what to do, how to move, what plans to make. The third thing is men. I think we need all three of these things, Mr. Rabaut, and I think we are going to get them.

Mr. RABAUT. Would you want to transfer that money into some sort of terms?

Mr. Libby. We have a presentation here.
Mr. Rabaut. You can enlarge on the question I asked you then.
Mr. Libby. Yes, sir.

STATUS OF COOPERATIVE PROGRAM

Mr. Rabaut. Contracts have not yet been executed on several of the cooperative program reactors. Indicate which these are and tell what the present prospects are for getting contracts.

Mr. Davis. I will try to answer that, Mr. Rabaut. You might want to refer to page 69 which lists the various projects. In the first round, we do have contracts with Consumers and with the designers of the plant. We do not have a contract for its construction. This is contemplated at a fairly early date.

In the second round, we have signed the contract with the manufacturer of the reactor for Elk River, and are in the process of getting the contract completed and signed with the Elk River Association itself. There will be a formal ceremony in connection with signing this contract this coming weekend, I believe.

Wolverine, as you know, has been discontinued.

In connection with the city of Piqua, we are now negotiating with the city and with Atomics International to get a final contract. The terms have been pretty well agreed on and it is merely a matter of the mechanics to get this drafted up into final contract language and signed. This you will note from the breakdown between 1958 and 1959 we hoped to finish by the end of 1958 but it will have to be in 1959.

At Chugach, the contract work is going ahead on the development, but we still are probably 18 months off from entering into a firm contract on construction.

In the third round, the contracts are all signed for Northern States.

Carolina-Virginia, again we have contract terms pretty well set up and had hoped to sign in 1958 but simply because of the sheer volume of the contract work we have had to put it off for a week or two. That will be signed in 1959.

The East Central Nuclear Group is up before the Joint Committee for special authorization, as is the Pennsylvania Power & Light Co., so we do not have contracts in either of those two cases.

I believe that is a brief summary of all of the contracts' status.

Mr. Rabaut. When do you expect to get contracts in the last two cases.

Mr. Davis. Shortly after we receive authorization to proceed, if we get it.

Mr. Riley. How soon do you expect to have the contract with the Carolina-Virginia Nuclear Power?

Mr. Davis. We have most of the contract terms worked out. The problem here is just the people to work up the final contract details and to meet with them and get the final contract documents in order and signed. I would say within a matter of 2 or 3 weeks, this sort of time period.

APPLIED FUEL CYCLE DEVELOPMENT

Mr. Rabaut. You seem to be undertaking a new program called applied fuel cycle development. Apparently you plan to contract for

space in non-Government reactors to test fuels under this program. Why do you need the funds for this program now ahead of the time that you have done your own development work on the fuels?

Mr. Davis. We are hoping to utilize some of the reactors now under construction and test out some of the types of fuels which are pretty well along in development.

Mr. Rabaut. The point is when are they going to be ready?

Mr. Davis. The reactors themselves?

Mr. Rabaut. Yes.

Mr. Davis. Around 1960.

Mr. Rabaut. Why do you want to get this money now?

Mr. Davis. In order to make arrangements for the fabrication of the fuel, the construction of the plants, the other things contemplated in this program, we must start by the year 1959 if we hope to put the fuel in soon after the plant is in operation.

Mr. Rabaut. Is this to help out the companies that are doing this?

Mr. Davis. No, sir, this would cover only the actual cost of putting in extra fuel charges, instrumenting them, disassembling them and examining the fuel after it is irradiated.

Mr. Rabaut. What is the effect of the delay?

Mr. Davis. The $27.5 million, about half of this is for space in the test reactors to carry out development work. The balance of it is for testing of multiton batches of fuel elements in power reactors. In order to encourage people to build the necessary test reactors we will have to contract in advance for the space in these test reactors in which to carry out the developmental irradiation.

Mr. Rabaut. Why don't we build the test reactors?

Mr. Floberg. We have test reactors, but the test reactors we have test samples of fuel. The purpose of this is to test large blocks of fuel. The only way you can do that is in a large reactor. I would like to answer your previous question more specifically about that by saying that one of the major hopes for the achievement of economic nuclear power is in the reduction of the cost in the fuel cycle. This means fuel element fabrication, including its design. This means the life of the fuel element, a very important factor. This means chemical reprocessing after it has been irradiated and so forth. This is the big area for improvement in the cost of nuclear power.

I would say that I cannot think of anything that would be more likely to retard the achievement of economical nuclear power than inhibitions on this fuel cycle development program that we have worked out together with the Joint Committee. This is an awfully important part of the whole reactor technology.

Mr. Rabaut. Is the Joint Committee looking with great favor on this?

Mr. Floberg. Not only the Joint Committee looks with unanimous favor on this particular thing, but I would say that industry looks with unanimous favor on this. Everybody agrees that the improvement of the fuel cycle economics is pretty nearly the key to the improvement in the nuclear power economics.

Mr. Rabaut. What about the time element in it? Here Mr. Davis has said that testing won't be done until 1960. Why are we going in and submitting ourselves to this expense so far ahead of time?

Mr. FLOBERG. Because the preparation for the testing must begin right now. This is not a minute too soon to begin the instrumenting of these reactors and to begin the design and fabrication of these fuel elements for 1960. The program will be established as quickly as we can get going on it. This will be a long-term program and it will be a very important one.

Mr. RABAUT. They need all the money now?

Mr. FLOBERG. Yes, sir.

Mr. RABAUT. How soon do you think you will spend it?

Mr. FLOBERG. The actual expenditure of money will take quite a bit of time, but the obligation of it will not be very far away.

MILITARY PROPULSION REACTOR PROGRAM

Mr. RABAUT. In the naval propulsion reactor program, are the funds in this budget adequate to move the submarine program forward as rapidly as possible?

Will the appropriations of additional money over the amount in this budget speed up developments in the missile propulsion and aircraft propulsion program?

Mr. FLOBERG. I think probably in both cases the answer is "Yes."

Mr. RABAUT. Are there any questions on the reactor program? Mr. Riley.

TYPE OF CONTRACTS IN COOPERATIVE ARRANGEMENTS PROGRAM

Mr. RILEY. Mr. Davis, this money that you advance for technical research and so forth on these cooperative reactors, is that money returned to the Government or is that a final expenditure on the part of the Government?

Mr. DAVIS. In the case of money that is provided for research and development, this is based on actual cost and is an actual expenditure. It is not returned to the Government in any way except that the Government does get all the research and development results for general dissemination to the public and gets all of the information on the costs of building and operating the reactor. This is the return we get from it.

Mr. RILEY. Suppose one of these cooperative ventures falls down; does the Government get any reimbursement for the amount which they have spent or do they lose theirs along with the other people?

Mr. DAVIS. You mean if it is the technical failure so to speak?

Mr. RILEY. Well, if they don't go through with the contract.

Mr. DAVIS. In some of the contracts that we have under consideration, if the company elects not to go ahead for reasons other than technical in feasibility or things of this sort, including not being able to get a license they would repay us the funds which had been advanced for research and development. But if the project is decided to be technically infeasible or if the reactor should be built and should not work, something like that, there would be no return of funds to the Commission.

Mr. RILEY. Both parties to the contract would lose what they had put into it.

Mr. DAVIS. They would lose what they had put in. I think it should be borne in mind that while not true so much in the case of

these larger reactors which we are quite sure will work, but in the case of things like our reactor experiments, that there is often a lot of talk when they don't work properly. One of the reasons we build them is to find out if they will work. We may do this with some of the other reactors as well.

Mr. RILEY. Will it be possible to make some adjustments in some of them if you find that there is some technical weakness? Is that correct, or do you have to go through with the original design?

Mr. DAVIS. One of the virtues of many of the types of enriched reactors that we are working on is that if we find that a core, the fuel charge, is not properly designed or does not function properly, it can be replaced. This is usually the heart of the reactor anyway. So I would say by and large most of the reactors we have have a rather unique advantage over some other types of reactors in that you can replace the innards in the reactor if you find that the first set of internals is not satisfactory.

Mr. RILEY. That is the point I wanted to find out. I did not exactly know how to phrase the question. But that part can be adjusted?

Mr. DAVIS. This in general is true of the kinds of reactors that use a pressure vessel and then have an assemblage of fuel elements inside it. If one has a reactor of the type of the Hanford reactors, where you have a lot of tubes or some of the other tubular type reactors, there are some things which are much harder to fix. For example, if you find you want to change the enrichment and therefore would like to change the spacing between the fuel elements you cannot do it in that kind of reactor, whereas in the pressure vessel type reactor this adjustment can be made quite easily.

Mr. RILEY. And most of these reactors that you are participating in on a cooperative basis are the ones that you have every reason to believe will be successful with some slight adjustments?

Mr. DAVIS. We believe they will be successful and most of them will be susceptible to fairly major changes if that should be found to be necessary.

Mr. RILEY. Thank you. I have one more question. The actual construction of the machinery itself is borne by the people that you make the contract with?

Mr. DAVIS. In the case of the private companies with whom we are entering into the cooperative program, they are bearing the costs of the fabrication, the machinery, and the erection of the plant. In the case of the projects under what we call the second round, with the municipal group and with the cooperatives, the Commission is actually contracting with the manufacturers to build the plant and will own the nuclear portion of the plant. The cooperating company will own the turbogenerator and will in effect buy the steam from the Commission to run the turbine generator. This is in the case of Elk River, Piqua, and Consumers Public Power District.

COOLING WATER REQUIREMENT FOR POWER REACTORS

Mr. RILEY. Do these water controlled reactors require a lot of this ordinary water to keep them cooled?

Mr. Davis. A nuclear powerplant requires just as much cooling water as a conventional powerplant. This is true whether it is a gas cooled reactor or a pressurized water reactor or whatever it is. In converting the heat that is generated in the heart of the reactor to electricity, you get an efficiency that may be between 17 percent in the case of the British Calder Hall reactors, which are about the lowest I know of, up to 35 percent in some cases. The balance of the heat that does not come out in the form of electricity has to be disposed of. The only economical way is to carry this away in cooling water of some sort. So a nuclear powerplant has just the same requirements with respect to cooling as any other kind of generating plant.

Mr. Riley. No matter where you build them, you are going to have to have considerable water.

Mr. Davis. You are going to have to have adequate supplies of cooling water, and the colder it is, the better.

Mr. Riley. In some of these countries, then, they will have difficulty in getting locations to put these reactors in, won't they?

Mr. Davis. This is a very serious problem in locating any new powerplant, whether it is a nuclear powerplant or a conventional fuel powerplant.

Mr. Riley. That will be one of the weaknesses in some of these countries that have a deficiency of water.

Mr. Davis. In theory one can use air-cooled condensers, but this leads to a much lower plant efficiency and a substantially increased cost and so far has not really been found practical for any large-size power station, regardless of its type.

Mr. Riley. Thank you. That is all, Mr. Chairman.

COST OF REACTOR DEVELOPMENT PROGRAM, 1954–58

Mr. Rabaut. Please place in the record a tabulation showing estimates and actual costs on this program for the last 5 years.

(The information referred to follows:)

	Estimates	Costs
1954	$87,800,000	$87,600,000
1955	87,100,000	95,300,000
1956	134,600,000	160,500,000
1957	285,300,000	266,600,000
1958	354,300,000	329,300,000

Physical Research Program

Mr. Rabaut. Now we will take up physical research program. We will insert the pages 114 through 124 in the record.

(The matter referred is as follows:)

Physical Research Program—Operating Costs

Program statement

Estimate fiscal year 1959	$90,000,000
Estimate fiscal year 1958	71,471,000
Increase	18,529,000

Within the physical research program basic investigations of the natural laws are undertaken that have special relevance to the Commission's activities and responsibilities. The investigations are in the fields of physics, mathematics, chemistry, and metallurgy and are undertaken to improve our command of nu-

clear technology and to accelerate and expand the developments of the uses of atomic energy. In retrospect, every advance in atomic energy capability can be traced to laboratory research of the type proposed under this program. About two-thirds of the program is carried on in the Commission's laboratories. Nearly all of the remaining portion is contracted to university laboratories where the work is closely integrated with postgraduate training in research.

The amount of $90 million is needed in fiscal year 1959 in order to meet the most pressing research requirements. The following table summarizes the estimate by the several areas of research within the physical research program:

Summary of estimates by category

Category	Actual, fiscal year 1957	Estimate, fiscal year 1958	Estimate, fiscal year 1959
1. Isotope process development	$330,475	$370,000	$371,000
2. High-energy physics	12,936,892	15,464,000	21,264,000
3. Nuclear structure and neutron physics	9,980,054	12,051,000	14,677,000
4. Extra-nuclear properties of matter	675,635	768,000	842,000
5. Design and development of devices for physics research	3,514,688	3,172,000	3,655,000
6. Physical methods of isotope separation	519,661	702,000	965,000
7. Computer development and mathematics research	485,729	2,181,000	2,863,000
8. Process chemistry	5,032,759	5,502,000	5,429,000
9. Classified project A	1,220,412	1,432,000	0
10. Chemical properties and reactions	12,521,922	14,412,000	18,243,000
11. Chemical isotope separation studies	577,235	560,000	676,000
12. Special projects	0	0	2,480,000
13. Production, treatment and properties of materials	1,947,890	2,336,000	2,689,000
14. Alloy theory and the nature of solids	3,186,451	3,867,000	4,644,000
15. Effects of irradiations on materials	1,193,418	1,580,000	2,162,000
16. Equipment not included in construction projects	5,220,994	7,074,000	9,040,000
Total physical research program	59,344,215	71,471,000	90,000,000

JUSTIFICATION OF CATEGORIES

1. Isotope process development, $371,000

Radioactive and stable isotopes are produced to meet AEC research requirements and requirements of Commission licensees and other authorized persons. The amount set forth in this section is for work in the development of methods for producing useful but presently unavailable isotopes; the development of methods of providing isotopes in more useful forms; and improvement of processes for recovering and purifying isotopes with particular emphasis on fission products. Total estimate of $371,000 for fiscal year 1959 provides for the same level of effort as fiscal year 1958.

2. High-energy physics, $21,264,000

High-energy physics represents one of the major frontiers in the field of nuclear physics. Studies in this activity show tremendous promise of producing major keys leading to a much better understanding of the fundamental properties of nuclear matter. Modern high-energy research requires large accelerators as the basic source of high-energy particles. Representative of these devices are the 3 billion electron volt proton synchrotron (Cosmotron) at Brookhaven, the 6 billion electron volt proton synchrotron (Bevatron) at UCRL, the one billion electron volt electron synchrotron at the California Institute of Technology, and several smaller devices at university sites. Furthermore, four additional high-energy accelerators are under construction, which will make available beams of higher energy and intensity. These four additional accelerators are: the Princeton-Pennsylvania 3 Bev. proton synchrotron, the Cambridge 6 Bev. electron synchrotron, the Argonne National Laboratory 12½ Bev. protron synchrotron, and the Brookhaven 30 Bev. protron alternating gradient synchrotron. Already during their brief lifetime of about 10 years, the high energy accelerators have rapidly extended the horizons of fundamental knowledge.

The increase of $5,800,000 planned for fiscal year 1959 is based on two urgent considerations: (1) The need for additional funds to properly utilize the high-energy facilities at existing installations, and (2) the need to organize programs at those high-energy accelerators now under construction. The expanded operation at existing facilities will require additional funds for both operation and for the incremental research effort. About half of the funds allocated to the

increased support of research at existing facilities is earmarked to continue the higher level of operation of the Bevatron. The balance of funds planned for existing facilitiy support will go to installations such as the synchrocyclotrons at the University of Rochester, the Carnegie Institute of Technology, and the 1 Bev. synchrotron at the California Institute of Technology. The other portion of the increase is required to make possible the initiation of research efforts preparatory to the start of operation of new high energy accelerators now under construction. These include the Princeton-Pennsylvania 3 Bev. proton synchrotron, the Cambridge 6 Bev. electron synchrotron, and the Argonne National Laboratory 12½ Bev. proton synchrotron.

3. Nuclear structure and neutron physics, $14,677,000

This category includes research relating to low-energy nuclear processes. One of the important activities is the nuclear cross section measurements program. The various nuclear cross section—total, capture, scattering, reactions, etc.—are measured for nuclei for incident neutrons, protrons, alpha-particles, etc., with energies from thermal through the million electron volt range. Acceleration of the incident charged particles and production of the neutrons are obtained by means of cyclotrons, electrostatic generators, synchrotrons, and other types of intermediate energy accelerators. In addition, a number of nuclear reactors are used as intense sources of neutrons for the thermal and epithermal range. A number of crystal spectrometers, choppers and time-of-flight detection equipment have been developed and are used for obtaining monoenergetic neutrons. The cross-sections program includes measurements of the fissile nuclei and reactor moderator, coolant, and structural materials, all of which are of great importance to reactor technology.

Information on nuclear structure is also obtained under this category from beta ray spectrometry, scintillation spectrometry, mass spectroscopy, nuclear moment measurements, and theoretical studies. This knowledge is important from a basic standpoint and of immediate interest to reactor and weapons design. This information assumes an important role in attempts to develop theories of nuclear structure and test various proposed nuclear models.

Besides the programs at the national laboratories, approximately 45 universities are engaged in this research. The studies range from those using modest equipment for studying radioisotopes to those using a heavy ion accelerator at Yale for studying coulomb excitation, neutron transfer reactors, and other subjects.

The increase of $2,626,000 planned for fiscal year 1959 provides for: (1) additional neutron studies using the CP–5 reactor and the Van de Graaff and Cockcroft-Walton accelerators at Argonne National Laboratory; (2) additional emphasis on the neutron physics and cross-sections program utilizing the reactor and cyclotrons at Brokhaven National Laboratory; (3) strengthened effort at Oak Ridge National Laboratory; and (4) initiation of a new program in nuclear spectrometry at Hanford using an existing 2 Mev Van de Graaff.

A number of new accelerators will also be in operation at universities and will require support. These include new Van de Graaffs at Johns Hopkins, Maryland, and Case, a tandem Van de Graff at Wisconsin and the new electron linac at Yale University.

4. Extra-nuclear properties of matter, $842,000

The investigations in this category deal with those atomic properties of matter which, though not directly associated with the nucleus, are still of important interest to the Commission. Included are studies on optical spectroscopy, mass spectrometry, behavior of low energy ions in matter, magnetic resonance techniques, and low temperature phenomena. Work is directed toward the improvement of the methods of study and the application of the methods to various fundamental problems.

The increase of $74,000 planned for fiscal year 1959 provides for increased effort in mass spectrometry and scintillation studies.

5. Design and development of devices for physics research, $3,655,000

Progress in any science—and especially in nuclear physics—is a function of the availability of good research tools. The tools and devices used in nuclear physics are extremely complex and costly. The support of this program is concentrated in the fields of accelerator development, where there exists a national need for new and hopefully less expensive means of producing particle beams of higher energies and intensities, and in the field of particle detection, where

new techniques are required to detect and observe new particles and to improve present detection methods. The increase of $483,000 planned for fiscal year 1959 provides for the conceptual design and development of the fixed field alternating gradient synchrotron now being studied by the Midwestern Universities Research Association. These funds are needed to study the 50 Mev—50 amperes electron model now being fabricated, as well as for the conceptual design, development, and testing of accelerator components.

6. Physical methods of isotope separation, $965,000

The research carried on under this category includes the work performed by the Oak Ridge National Laboratory to provide quantities of isotopically pure elements for the cross-sections program and nuclear-reaction studies. Also included are three small off-site programs at universities to carry forward the development of new techniques and processes for the separation of isotopes. It is under this program that new physical methods for isotope separation are evaluated and developed to a point where, if the proposed process appears economically feasible, it can be further exploited.

The increase of $263,000 planned for fiscal year 1959 provides for studies directed toward the production of greater quantities of isotopically pure elements and for further development of a certain method of separating isotopes.

7. Computer development and mathematical research, $2,863,000

The highly complex, technical, and interrelated nature of the Commission's program has led to considerable dependence on the use of high speed automatic computers in most phases of its activities. Numerical computations are of growing importance in weapon design, reactor design, particle accelerator design, meteorology, the statistical aspects of fallout, project Sherwood, plant design and operations analysis, geological surveys, process flow, and other applied activities. They are also assuming an important role in areas of basic research important to the Atomic Energy Commission such as theoretical nuclear physics, molecular physics, chemistry, solid state, statistics, particle trajectories, theory of turbulence, magneto-hydro-dynamics, thermodynamics and meteorology.

The increase of $682,000 proposed for fiscal year 1959 provides for research programs at universities, Government laboratories, and industrial organizations to improve computer components and the logical design of computers and the application to actual computing systems, and to provide for the use of computing equipment by universities and other laboratories in research programs.

Computers currently available to the Commission, or under development, are not adequate to meet the current or projected needs of the atomic energy program. It is expected that this support of computer research will stimulate the development and construction of the required advanced computers, as well as providing the means for the incidental research in programing, numerical analysis, and general problem-solving techniques. Certain advances in the cryogenic and logic fields have opened the possibilities of radical advances, which make it necessary to expand this work.

8. Process chemistry, $5,429,000

This activity includes laboratory investigations of new methods for processing various types of nuclear fuels and ores, development of suitable analytical techniques for process control, and the determination of physical and chemical properties of various systems to provide data necessary for process development and evaluation of pilot plant tests. Considerable emphasis is currently being placed on obtaining information pertinent to high-temperature processing, and on the development of analytical techniques applying to these processes. A continuing study of the factors leading to the optimum solvent extraction process for recovery of nuclear materials from power reactor spent fuel elements of various types is being carried out. Studies are also underway to evaluate methods to produce low cost waste treatment and storage.

Emphasis will be placed on studies of pyrochemical processes such as liquid metal extraction, induction melting over ceramic surfaces, and extraction from unmelted alloys. Work is also carried out on the thermochemistry of systems involving fused alkali halides and uranium-bismuth solutions, to provide basic data for the liquid metal fuel reactor, and other reactor concepts. Reactor fuel and breeder blanket processing studies involving these particular liquid metal and salt systems are in progress.

Also included in this program are fundamental studies on the chemistry and engineering of various chemical separation methods: basic geochemical and geophysical research related to obtaining a better understanding of the place-

ment and processing of uranium and thorium ores; and a continuation of studies of the application of ion exchange techniques to separation problems.

The development of isolation methods for, and the recovery of, transuranium elements such as neptunium and americium must be pursued at an increased level. The nuclear and chemical properties of the heavy elements and isotopes must be understood so that development of reactors and chemical processes can proceed in a more efficient manner. In addition, some of these heavy isotopes are finding important practical uses: Neptunium as a neutron thereshold detector, americium in thickness and density gages, californium as a fast neutron source, etc.

The estimate for this category for fiscal 1959 continues the fiscal 1958 level at approximately $5.5 million.

9. Classified project A, 0

10. Chemical properties and reactions, $18,243,000

These activities represent the long-term, fundamental investigation, which are the foundation for the applied chemistry and chemical engineering program of the AEC. It is essential that such fundamental knowledge be gained in order that there be advancements in the chemical aspects and applications of the field of nuclear energy. The programatic and developmental studies are dependent on fundamental knowledge of the behavior and properties of materials and systems being used, but in many cases programs and developmental conceptions have their genesis in basic research such as that being carried out under this program.

The research program which is carried out under this category can be divided into several separate but not necessarily exclusive fields as follows: (1) Under nuclear chemistry, the production, isolation, identification, and study of properties of nuclides are carried out. These nuclides are produced by neutron or charged particle irradiation, result from fission, or arise from decay of naturally occurring or artificially produced nuclides. Considerable emphasis is placed on the actinide series (heavy elements) both with respect to nuclear properties and chemical properties including electronic structure and nuclear moments. (2) Radiation chemistry has the goal of characterizing and measuring yields of reactions caused in chemical systems by ionizing radiation, and developing theories to explain the effects. Related to this is hot-atom chemistry, which involves the chemical phenomena associated with the formation of radionuclides by nuclear reactions. (3) General physical and inorganic chemistry studies are conceived to produce quantitative thermodynamic and kinetic data, as well as information on the chemical behavior of inorganic materials and their solutions. Various investigations include the study of the following properties of various systems: solubilities, oxidation states, species in solution, distribution between various phases, low temperature thermodynamic properties, surface and corrosion phenomena, properties of volatile compounds of heavy elements, and mechanisms by which reaction processes proceed. (4) High-temperature chemistry continues to be of great importance to the atomic energy program. Studies of kinetics and equilibria of reactions and chemical systems at elevated temperatures are being carried out in the gaseous, solid and liquid states. (5) Basic analytical chemistry is essential to the development of analytical procedures for all materials of interest to the AEC program and particularly as it relates to the problem of radiochemical analyses. (6) The organic chemistry program is relatively small and is related to the organic materials which are important to the atomic energy program and to the study of problems to which the uses of isotopes can be applied. (7) Isotope studies involve theoretical and experimental research on the effects of mass differences of chemical reaction. Such effects are the basis for chemical isotope separation processes as well as leading to a basic understanding of chemical processes. This listing is intended to be illustrative and not exhaustive.

The increase of $3,831,000 planned for fiscal year 1959 provides for an increased level of high temperature chemistry research, and for additional effort to be devoted to radiation chemistry, hot-atom chemistry and organic chemistry. The importance of corrosion in the AEC program is well recognized; additional fundamental studies in related fields (surface chemistry, electrochemistry, etc.) must be undertaken. Nuclear chemistry is also an area in which an increased level of support is particularly urgent. The new high-energy and heavy ion accelerators require an increased nuclear chemical effort for a balanced and effective overall program. Also important is an adequate level of effort

in the isolation, identification and study of the properties of heavy nuclides produced as a result of neutron irradiation.

Increased efforts in various important fields of physical and inorganic chemistry are also planned. Fields in particular need of increased emphasis include: the effect of isotopic substitution on chemical rates and equilibria; free radical chemistry; nuclear magnetic resonance studies; development of radiochemical analysis procedures, including activation analysis, the identity, properties, and reactions of inorganic species in aqueous solutions; and studies of molecular structure.

11. Chemical isotope separation studies, $676,000

The objectives of this program are to originate and develop economical chemical methods of enriching bulk quantities of isotopes; and to obtain fundamental information on the kinetics of chemical exchange processes, on the properties of ion exchange resins, and on the thermodynamic, spectroscopic, and chemical behavior of isotopically substituted compounds. The program attempts to relate the basic chemistry of an element of feasible production methods so that probable costs and availability data may be obtained for particular isotopes.

The increase of $116,000 planned for fiscal year 1959 provides for the development of new methods of separating important isotopes such as oxygen 17 and oxygen 18, which are urgently needed for research and which are not being produced in this country at the present time, as well as to study the possibility of further economies in the production of the many important isotopes being produced for the Commission's programs.

12. Special projects, $2,480,000

The narrative for this category is contained on classified page 125.

13. Production, treatment, and properties of materials, $2,689,000

This program is devoted to research and development on metals, alloys, and ceramics that are of special interest to the Atomic Energy Commission. The requirements for materials in the atomic energy program are severe and often unique, and in many cases the efficiency or even the feasibility of a design or system depends upon the properties of the available materials. Since many of the operational factors in atomic energy are unusual, the conventional materials are often unsuitable. Under this category considerable attention is devoted to problems relating to the use of uranium, thorium and plutonium as fissionable or fertile materials. Typical efforts are the development of improved processes for extracting and purifying these metals, and investigation of new uranium alloys.

Nonfissionable materials are also included in the program with particular attention to materials for possible use as a fuel element clad, moderator, control rod, etc. This activity includes research and development on new extraction processes for vanadium, niobium and the rare earths, and the metallurgical characteristics of these metals and their alloys; the behavior and properties of graphite and ceramics; and the general physical metallurgy of materials of interest in the atomic energy program. Another phase of the effort is concerned with research and development on improved barriers for the gaseous diffusion process.

This category also includes the very important field of corrosion and the development of corrosion resistant alloys. The trend of reactor design is imposing still more severe corrosion problems on materials.

The increase of $353,000 proposed for fiscal year 1959 provides for an increased effort on fundamental plutonium metallurgy and research on intermetallic uranium compounds and increased effort on applied and fundamental corrosion and ceramics research, and on pure materials since the availability of these pure materials for research is inadequate for the demands of materials research.

14. Alloy theory and the nature of solids, $4,644,000

This program includes fundamental studies to increase our understanding of the nature and properties of solids with the purpose of achieving improved materials for the atomic energy program. The research projects include investigations on the nature of cold worked metal; the processes of recovery and recrystallization, diffusion and sintering in metals and ceramics; the nature of lattice imperfections and solid solutions; the structure of metals and alloys; the thermodynamics of solids; and the mechanism of phase transformations. This category also includes basic studies in solid state physics such as soft

X-ray spectroscopy, low temperature specific heat, X-ray and neutron diffraction, nuclear and paramagnetic resonance studies, and others.

The increase of $777,000 planned for fiscal year 1959 provides for a higher level of research in solid state physics, fundamental physical metallurgy, basic surface research, and high temperature materials research is required.

15. Effects of irradiation on materials, $2,162,000

One of the unique circumstances involved in the use of materials in the atomic energy program is the fact that they may be exposed to irradiation for prolonged periods. This condition can produce drastic changes in the behavior and properties of materials and restricts their selection. The research program in this field is devoted to three general areas: (1) An understanding of the theory and basic mechanism of the effect of irradiation on solids, (2) the effect of irradiation on the kinetics of metallurgical processes, and (3) a practical evaluation of the performance of certain materials under irradiation. Although considerable progress has been made in the field of irradiation effects, there still remain many difficult problems from both the fundamental and applied standpoint. Accordingly, the increase of $582,000 planned for fiscal year 1959 provides for increased effort on applied research in radiation effects, solid state physics radiation studies (basic mechanism, etc.), and the effect of radiation on physical metallurgical reactions.

16. Equipment not included in construction projects, $9,040,000

Equipment requirements for the physical research program are estimated at $9,040,000 for fiscal year 1959, which represents an increase of $1,966,000 over fiscal year 1958. The estimate is based on normal requirements as indicated by past experience and on the needs of the expanding research program planned for fiscal year 1959. A major portion of the equipment provided under this category will support the physics, chemistry, and metallurgy research programs being conducted at the various major laboratories. The remainder will support research being conducted through the contract research program at colleges, universities, and private laboratories throughout the country.

The equipment purchased with the funds includes replacement equipment as well as equipment additions necessary to support the expanding program. Examples of the type of equipment include special fabrications and purchases of unique testing and experimental equipment for the high energy physics programs at Argonne, Brookhaven, the University of California Radiation Laboratory and at various universities under the headquarters designated contract research program; equipment to raise the energy of the 5.5 million electron volt Van de Graaff at Oak Ridge; the second phase of the linear accelerator at Yale University; as well as multichannel analyzers, electromagnets, motor generator sets, spectrophotometers, mass spectrometers, vacuum spectrographs, and other similar items of equipment.

There follows a breakdown of the total equipment costs for fiscal year 1959 indicating amounts estimated for each major installation in relationship to its operating costs under this program:

[In thousands]

Installation	Other operating costs	Equipment costs
University of California Radiation Laboratory	$13,995	$2,000
Oak Ridge National Laboratory	11,176	2,218
Argonne National Laboratory	11,196	920
Brookhaven National Laboratory	9,555	1,700
Ames Laboratory	2,881	200
All other	32,157	2,002
Total	80,960	9,040

Mr. Rabaut. I note here that the appropriation in 1958 was $71,471,000, and the request for 1959 is $90 million, or an increase of $18,529,000. Your principal increases are in the fields of high-energy physics, nuclear structure and neutron physics and chemical properties and reactions. Please explain why these increases are necessary.

Mr. Floberg. Dr. Williams will answer that.

HIGH-ENERGY PHYSICS

Mr. WILLIAMS. The first item you mentioned, high-energy physics, is a subject which has been growing with time. This area of investigation is in the very forefront of the physical sciences. We are now bringing in new accelerators and are constructing four more authorized in the past. This is an array of great interest and of great international prestige. Of the increased cost of $5,800,000 for this particular item, $3 million is to increase the utilization of already existing accelerators by putting them on a 24-hour-a-day basis of operation to help take care of the backlog of experimental work. The remaining $2.8 million is to begin mounting programs which will be ready by the time our new accelerators come on the line. You might say the $5.8 million is roughly split between increased utilization of existing accelerators and preparation for the effective utilization of new ones now under construction.

NUCLEAR STRUCTURE AND NEUTRON PHYSICS

In the case of the nuclear structure and neutron physics, we are in an area which to some extent is more developed in time. It is out of the study of the process occurring with nuclei in the modest energy range of a few million electron volts that we obtain the fundamental or basic data on which we can design reactors, for example, and to make the practical applications of nuclear physics which is the main business and source of interest of the Atomic Energy Commission today. This is to be contrasted to the first item I mentioned—the high energy physics program—where we are looking at the long range future of our understanding of nuclei and making a long range program.

CHEMICAL PROPERTIES AND REACTIONS

In the same sense, chemical properties and reactions, item No. 10, involves the investigation of the basic chemistry phenomena which are necessary so that the nuclear energy released can interact through atoms and perform useful work. The processes employed then are based on our knowledge of this basic chemical phenomena. So in the latter two areas—the neutron physics and the chemistry itself—we are working in the area of physics and chemistry which are the fundamental research areas on which the whole crop of useful applications in the future must depend.

COST LEVEL OF ANALYZING PROPOSED RESEARCH PROGRAM

Mr. RABAUT. If the full amount of the increase requested in this program is allowed, what will the appropriations have to be next year to continue the program at the same level?

Mr. WILLIAMS. I would like to refer that question to Mr. McCarthy.

Mr. MCCARTHY. To annualize this program in 1960, Mr. Chairman, would require about $10 million additional. This estimate is based on the rate of growth the program will attain in 1959.

Mr. RABAUT. $100 million then will be projected for next year?

Mr. MCCARTHY. That is correct.

Mr. RABAUT. How is it you are making the big jump this year, if for only $90 million you need $100 million when on $71 million you need an increase of $18 million?

Mr. MCCARTHY. In 1959, in addition to annualizing, there are other growths in the program.

Mr. RABAUT. You are more than annualizing it this year.

Mr. MCCARTHY. We are more than annualizing it in 1959.

Mr. RABAUT. What are some of the growths?

Mr. MCCARTHY. There are growths in the offsite program.

ADMINISTRATIVE AND INDIRECT COSTS IN THE OFFSITE PROGRAM

Mr. RABAUT. What administrative and indirect costs are covered in your on-campus research contracts?

Mr. WILLIAMS. These contracts are individually negotiated. It should be understood first that these are shared cost contracts and that the universities put up their own funds to help support this research. The variable extent depends on the nature and research to be undertaken. We get offsite contract research performed at much lower cost than if we paid all the overhead costs that would be incurred in contracting with industrial companies in any sense of the word.

Mr. RABAUT. What percentage of our funds go into administrative costs?

Mr. WILLIAMS. In terms of our own Division of Research?

Mr. RABAUT. No, in the contracts.

Mr. WILLIAMS. In the contracts which we let with the universities?

Mr. RABAUT. Yes.

Mr. WILLIAMS. A very, very slight fraction. The only administration which we do of our university contracts is review of them which is done by the personnel in the Division of Research of the AEC.

Mr. RABAUT. I am talking about the cost that the university normally would have, like light, heat, items of that type. Do we get into any of that?

Mr. WILLIAMS. Very definitely; these are all negotiated.

Mr. RABAUT. What percent of our money goes into that type of cost?

Mr. WILLIAMS. I can only give you the range of figures. We will be glad to add them up and supply it for the record.

Mr. RABAUT. Suppose you supply it for the record.

Mr. WILLIAMS. We will be glad to.

Mr. RABAUT. Put it under the head of administrative cost.

(The information referred to follows:)

ADMINISTRATIVE COSTS, RESEARCH CONTRACTS

The offsite physical research program for fiscal year 1958 totaled approximately $31,800,000 of which the Atomic Energy Commission contributed $22.9 million and the universities contributed approximately $8.9 million, or 28 percent of the total program. Of the total amount of $31.8 million, approximately $24.9 million covered direct costs and $6.9 million or an average 27.7 percent of direct costs was required for overhead expenses associated with the research.

This allowance for overhead covers such items as administrative and general expenses not applicable to any specific department of an institution, operation and maintenance expense associated with the institution's physical plant and shops, library expense, and use allowance for building and equipment.

At the present time a statement of common principles for determining the allowable costs (including overhead or indirect costs) of research and development

performed by college and universities for the Federal Government is being drafted by the agencies concerned, the Bureau of the Budget and representatives of the institutions.

CONTRACT RENEWALS

Mr. RABAUT. How many contracts which expired in the last year have you refused to renew or to replace with the same recipients?

Mr. WILLIAMS. We have provided, I believe, for the committee certain figures of that sort. During the period July 1957 through May 1958 we received 193 new proposals. Of these contract proposals, we denied 95. The renewal proposals received were 306. None of these renewal proposals were actually refused. The reason underlying that is that we do not have the policy of terminating a renewal contract by receiving a full proposal and then turning it down. We are in continuous touch with these people so that, when we are in a position of not wanting to renew a contract, we don't, in general, get a proposal from them. It is done by negotiation. During fiscal 1958, for example, we did not renew, but we terminated 19 contracts during that period.

Mr. RABAUT. Nineteen out of how many?

Mr. WILLIAMS. Nineteen out of three hundred.

Mr. RABAUT. What was the record the year before, do you know?

Mr. WILLIAMS. Yes. The year before, there were 32 terminated. That is in 1957. In 1956, there were 50. The year before that, there were 29, and so on. On the order of 20, 30, or 35 are terminated annually.

Mr. RABAUT. Are these mostly with institutions?

Mr. WILLIAMS. Yes. We are dealing with 100 institutions.

Mr. RABAUT. None of them are with individuals?

Mr. WILLIAMS. None of them are with individuals.

Mr. RABAUT. What are the principal reasons for discontinuing a contract?

Mr. WILLIAMS. The principal reasons would be our lack of interest in the research being done or the accomplishment of the original objective.

Mr. RABAUT. In other words, they don't devote themselves to the task?

Mr. WILLIAMS. No, sir. The task may be completed or our interest may be decreased as a result of the growth in our atomic-energy program, or some other country may have solved the problem in research for us in the meantime.

Mr. RABAUT. Do you evaluate both the institutions and the individuals who work under the contract?

Mr. WILLIAMS. We evaluate, in general, the associated departments. We are interested in physical science. We are interested in not only the strength of the individual that would be responsible for this, but the strength of the chemistry department as a whole and other associated departments at the institution.

Mr. RABAUT. With whom are the contracts made?

Mr. WILLIAMS. With the institutions.

Mr. RABAUT. Do you have any details from the institution, normally, about their dealings with the people that serve under the contract?

Mr. WILLIAMS. In general, these people are well investigated through contact with the people themselves. Our own operations offices maintain contact with the physical science people in these universities or institutions.

Mr. RABAUT. Do some agencies of your office have contact with the individuals while they are performing under this contract?

Mr. WILLIAMS. Yes.

Mr. RABAUT. How often do you contact them?

Mr. WILLIAMS. Those that are major in size, complexity, and dollar value are visited several times a year. There may be some rather small ones that we do not get to every year.

Mr. RABAUT. I imagine the character of the institution has a great deal to do with their acceptance?

Mr. WILLIAMS. Yes. We try to do business with the institutions that have a good reputation.

Mr. RABAUT. Place in the record a tabulation showing how many of your present on-campus contracts are with recipients who have been continuously under contract for 10 years with you, for 5 years, and 3 years.

Mr. WILLIAMS. We will be glad to do that, sir.

(The information referred to follows:)

Division of Research—Off-site contract renewals, fiscal year 1958

Continuously in effect for—	Number of contracts renewed	Dollar value of contracts renewed
Less than 3 years	135	$4,085,425
3 to 5 years	68	2,556,771
5 to 10 years	119	8,585,942
10 or more years	15	4,838,160
Total	337	20,066,298

Mr. RABAUT. Are there any questions?

Mr. FLOBERG. Mr. Rabaut, before you go to other questions, I might comment that Dr. Williams is our new Director of the Research Division. He has joined the Commission very recently. We feel fortunate to have him on board.

BACKGROUND OF DR. WILLIAMS

Mr. RABAUT. I know something about him. I will steal the show from Ben Jensen. He is going to ask him anyhow. I will ask him where he comes from, and so forth. Doctor, tell us about yourself.

Mr. WILLIAMS. I was born a Canadian. I did my grammar, high school, and undergraduate work in the Province of British Columbia. I have a master's and doctor's degree at the University of California at Berkeley, and was a postdoctoral student at the University of Chicago. I have been on the staff of the University of Minnesota since 1933 except for the four years I was at Los Alamos, N. Mex.

Mr. RABAUT. One thing about him, he has been around.

Mr. JENSEN. I have some questions I would like to read into the record and let them answer.

Mr. RABAUT. All right.

Mr. JENSEN. What is the total dollar assistance and what is the percentage of the project cost represented by the total Federal contributions to the nine projects listed on page 63?

If no-fuel charge is contemplated for a specific period indicate the total Federal cost and indicate if it is included in the reported assistance figure.

(The information requested follows:)

Cooperative program summary

[In thousands]

	Total	AEC	Non-AEC costs [1]	Percent of AEC costs to total estimated costs
Yankee:				
Preconstruction research and development	$5,000	$5,000	[2]	
Construction	53,917	0	$53,917	
Fuel use charges	2,900	2,900		
Total	61,817	7,900	53,917	12.8
Consumers Public Power District:				
Preconstruction research and development	18,165	18,165		
Construction	50,175	24,013	26,162	
Unusual maintenance and fuel-cycle costs	8,000	8,000		
Fuel use charges	1,325	1,325		
Total	77,665	51,503	26,162	66.3
Power Reactor Development Co.:				
Preconstruction research and development	20,515	[3] 4,450	16,065	
Construction	51,081		51,081	
Fuel use charges	3,703	3,703		
Total	75,299	8,153	67,146	10.8
Rural Cooperative Power Association:				
Construction	11,719	[4] 9,269	2,450	
Postconstruction research and development	2,176	[5] 2,176		
Total	13,895	11,445	2,450	82.3
City of Piqua:				
Preconstruction research and development	3,500	3,500		
Construction	9,442	[6] 5,487	3,955	
Postconstruction research and development	3,318	[7] 3,318		
Total	16,260	12,305	3,955	75.7
Chugach:				
Preconstruction research and development	9,905	[8] 9,880	25	
Construction	11,079	9,229	1,850	
Postconstruction research and development	2,500	2,500		
Total	23,484	21,609	1,875	92.3
Northern States Power Co.:				
Preconstruction research and development	5,500	[9] 5,500		
Construction	21,600		21,600	
Postconstruction research and development	1,700	[9] 500	1,200	
Fuel use charges	1,000	[9] 1,000		
Total	29,800	7,000	22,800	23.5
Carolinas-Virginia Nuclear Power Association:				
Preconstruction research and development	10,145	[10] 10,145		
Construction	21,141		[11] 21,141	
Postconstruction research and development	10,427	[10] 3,760	6,667	
Fuel use charges	750	[9] 750		
D_2O use charges	420		420	
Total	42,883	14,655	[12] 28,228	34.2

See footnotes at end of table, p. 1052.

Cooperative program summary—Continued

[In thousands]

	Total	AEC	Non-AEC costs [1]	Percent of AEC costs to total estimated costs
East Central Nuclear Group-Florida West Coast Nuclear Group:				
Preconstruction research and development	$19,166	[13] $8,646	[13] $10,520	
Construction	25,885		25,885	
Postconstruction research and development	10,426	[8] 3,000	[14] 7,426	
Fuel-use charges	350	350		
D_2O-use charges	450	450		
Total	56,277	12,446	43,831	22.1
Pennsylvania Power & Light: Preconstruction research and development, phase I	12,500	[15] 7,000	5,500	56.0

[1] Includes contribution by utility and reactor manufacturers.
[2] Westinghouse and Yankee will pay any research and development costs over $5,000,000.
[3] This is maximum amount and includes $141,000 costed in fiscal year 1957.
[4] Constitutes a maximum. Includes pro rata allocations of fee and contingency.
[5] After sale of steam to RCPA. Covers the entire 5-year operating period.
[6] Maximum amount including escalation.
[7] Includes 5-years' fuel fixed price bid plus escalation; fuel conversion costs; and $30,000 operating costs after sale of steam.
[8] Includes $1,725,000 funded in fiscal year 1957.
[9] Maximum amount.
[10] Includes escalation, and if research and development costs exceed ceiling, CVNPA will bear the excess.
[11] Includes escalation.
[12] Does not include the first core, estimated to cost $1,000,000.
[13] Maximum amount, including overrun of AEC option.
[14] Includes excess operating of $5,426,000 and research and development of $2,000,000.
[15] Maximum amount. Excludes Oak Ridge National Laboratory's share of the cost of its joint Irradiation Program, Jan. 1, 1958, to Dec. 31, 1959.

DUPLICATION OF RESEARCH WORK

Mr. JENSEN. Is there any duplication in the work of research being carried on under the civilian power reactor program shown on page 53 and the reactor assistance and development program on page 72?

(The information referred to follows:)

Generally, there is no unnecessary duplication. The research and development associated with the listed categories on page 53 is applied research and development and is carried out in direct support of the various reactor experimental projects listed. The research and development associated with the categories shown on page 72 is of a basic or general nature or advanced nature in support of the entire field of reactor technology. Also research and development required to support the research and general test reactor program is included in the activities listed on page 72. There is a free interchange of data between the two activities.

Mr. JENSEN. What care is exercised to assure that unwarranted and costly duplication is not being obtained in the various portions of reactor development and physical research program.

(The information referred to follows:)

The maximum technical control possible is exercised with the limited staff of AEC reactor scientists and engineers available. The larger expenditures of funds for research and development occur in the work supporting a specific experimental reactor project. Establishment of the project in itself aids the cognizant AEC staff in focussing attention on a narrow band of endeavor. The AEC staff concerns itself with coordination of efforts within the project and is backed up by sound accounting practices employed by the contractors and AEC. Another valuable aid is the publication and dissemination of technical reports.

AVAILABILITY OF PERSONNEL

Mr. JENSEN. What are the prospects for the additional scientists, engineers and other technical personnel that will be needed to carry on the expanded AEC program contemplated?

(The information referred to follows:)

The problem is not as severe now as it was 2 years ago at which time the AEC reactor engineer training and education program started. The problem is not eliminated, but it has lessened.

Mr. JENSEN. Will there be any way to prevent bidding on such personnel and the resulting increase in Federal cost?

(The information referred to follows:)

No. The bid-up results from competition for the national available technical manpower pool. The total civilian reactor development program is a very small portion of the total scientific and technical endeavor of the United States.

Mr. JENSEN. What is the opinion of the Commission as to whether there are sufficient engineers, scientists, and technical personnel available to carry out the contemplated fiscal year 1959 program as budgeted plus an expanded program provided in the proposed new authorization bill?

(The information referred to is as follows:)

In our opinion there will be sufficient numbers of engineers and scientists to carry out the contemplated program. However, the average quality of these persons as measured in terms of experience is low, therefore the costs are probably higher and time schedules longer than if sufficient experienced personnel were available.

COST OF RESEARCH AND DEVELOPMENT PROGRAM

Mr. JENSEN. What is the total estimated cost of the first 10 items on page 55?

How many of these will produce electric power and what is the kilowatt capacity?

(The information referred to follows:)

The 10 items listed on page 55 represent areas of research and development that have been initiated during the past few years and which are continuing. Since it is not possible at this time to say specifically when these development programs will attain their objectives of developing economic reactor systems, or will demonstrate that a particular system does not have economic promise, we cannot determine the total cost of any given development program. However, the attached table 1 gives the actual costs through fiscal year 1957 and estimates for fiscal years 1958 and 1959. It is reasonable to expect that after fiscal year 1959, certain of these concepts may be deemphasized while other concepts may be accentuated and additional concepts may be initiated.

An integral part of these development programs is the fabrication and operation of reactor experiments, prototype plants, or specialized test reactors. A list of these plants with their thermal and electrical outputs is attached as table 2.

TABLE 1.—*Costs of reactor development programs*

[In thousands of dollars]

	Through fiscal year 1957	Estimated, fiscal year 1958	Estimated, fiscal year 1959	Total
Pressurized water	47,837	17,574	20,400	85,811
Boiling water	18,904	3,959	5,513	28,376
Homogeneous reactors	40,674	14,568	14,300	69,542
Fast breeder reactor	22,757	8,595	12,400	43,752
Sodium graphite reactor	13,920	7,510	8,800	30,230
Liquid metal fuel reactor	5,439	6,705	8,000	20,144
Organic moderator reactor	3,986	5,319	3,500	12,805
Plutonium recycle reactor	1,377	3,581	5,000	9,958
Pressurized heavy water	397	1,975	5,500	7,872
Gas cooled power reactor	0	3,751	6,000	9,751
Grand total				318,241

TABLE 2.—*Designed power output for AEC experimental power reactors*

Reactor	Thermal output (megawatts)	Net electric output (megawatts)
PWR	231.0	[1] 60.0
Borax	15.0	2.0
EBWR	[2] 20.0	4.5
HRE-II	5.2	[3]
EBR-I	1.4	[3]
EBR-II	62.5	16.5
SRE	20.0	6.0
LMFRE	5.0	0
OMR	15.0	0
Pu recycle	70.0	0
D_2O components test reactor	61.0	0

[1] This plant is expected to reach 100 megawatts, electric (net).
[2] This plant has operated as high as 61.7 megawatts, thermal.
[3] Negligible.

THERMAL RATING AND ELECTRICAL RATING

Mr. JENSEN. What is the ratio between thermal rating and electrical rating of atomic reactors?

(The information referred to follows:)

The ratio between thermal rating and net electrical rating is generally 20 to 40 percent for a conventional plant. For the Commission's experimental reactors the ratio is as follows:

	Percent
PWR	26.0
Borax	13.3
EBWR	22.6
EBR-II	26.3
SRE	30.0

SELECTION OF CONTRACTORS AND COST CONTROLS

Mr. JENSEN. Upon what basis are the engineer contractors selected for the various research and construction jobs, and how are the contract costs arrived at?

What checks or controls are in force to see that we get value received for the money expended?

(The information referred to follows:)

The criteria used with each type of contractor are listed below. It should be noted that these criteria may be amended to cover the needs of a specific project.

ARCHITECT ENGINEER SELECTION CRITERIA

1. Reputation and standing of the firm and its principal members in performance of the contemplated type of work.
2. Past record in performing work for the AEC, for other Government agencies and private industry, including performance from the standpoint of costs, quality of work, and ability to meet schedules.
3. Adequacy of office facilities.
4. The volume of work of the firm in previous years, and the extent to which the firm is currently engaged in other work.
5. Ability to assign an adequate number of qualified key personnel from the firm's own organization, including a competent supervising representative having considerable experience in responsible positions on work of a similar nature.
6. Additional management qualifications such as record in personnel relations, safety record, and adequacy of accounting systems.
7. The portions of the work the firm is able to perform with its own forces when required.
8. Geographical location of home office and familiarity with the locality in which the project is located.

RESEARCH AND DEVELOPMENT SELECTION CRITERIA

1. Experience in carrying out complex development programs .
2. Qualifications of key personnel.
3. Availability of key personnel.
4. Facilities available.
5. Conflicts with project:
   (*a*) Work presently underway.
   (*b*) Future work.
   (*c*) Priority assigned to AEC project.
6. Organization for project.
7. Support of top management.
8. Cost estimate:
   (*a*) Salaries, fees, overhead allowances.
   (*b*) Equipment.
9. Subcontracting required.

ESTIMATING CONTRACT COSTS

Similar principles are followed for both research and development and construction contracts. However, the specific components used in working up the cost estimates vary in importance depending upon the nature of the project. The cost estimate is derived by breaking down a project into its smallest elements, costing these based on previous experience, and comparing with similar elements of cost on similar operations going on at other AEC installations.

The AEC will usually arrive at the cost estimate prior to requesting proposals. The operating contractor most conversant with the project may help in arriving at this estimate or may arrive at an independent estimate. In the case of research and development contracts the proposer wil also submit an estimate which is evaluated by the AEC.

CHECKS OF CONTROLS IN FORCE

The program controls in effect in the Division of Reactor Development apply to both research and development and to any related construction, and are the means by which judgment is made as to whether or not value has been received. These controls are:

1. Evaluation in connection with project proposal formulation.
2. Evaluation on a continuing basis by Division professional staff.
3. Evaluation annually on a broad basis as a part of the budget process.

About January 1 of each year, program assumptions are developed within the Division for each program element. These in effect constitute a statement of program goals or objectives. These assumptions are projected to cover the next 2 fiscal years. After approval by the Commission, the assumptions are transmitted by the Division through the operations office to the contractors.

On the basis of the program assumptions, the contractors prepare project proposals which describe past accomplishments and proposed work for the next 2 fiscal years, all set forth in considerable detail. These proposals in draft form are reviewed at the contractor sites by Division and operations office personnel at which time a critical appraisal of past work relative to previous year's proposals is made, as well as an analysis of technical content of new proposed work.

In addition, each Division program activity is assigned to a project engineer or technical specialist in the Division who maintains close progress checks through the year, frequently visiting the contractor in order to observe progress and discover problems firsthand. Where operations offices have adequate technical staffs, this liaison is more frequent and intimate, complementing thereby the effort and interest of the Division technical staff.

As a part of the internal budget process, operations office budgets are reviewed in the field each year by Division management and program personnel, providing a comprehensive program review. At this time the Division weighs accomplishment against value across the board.

Beside the programmatic evaluation described above there is a Commission requirement that all contract and subcontract actions up to $5.0 million be reviewed an approved by managers of operations offices, and above that amount by the Headquarters.

The Commission's comprehensive internal audit program serves to measure and evaluate the effectiveness of other controls, particularly those involving financial management and propriety in the use of funds. The Commission internal audit program provides for annual review of contractor operations and AEC operations in the field. Pertinent to the question, internal audit is conducted in the following functional areas:

Budget estimating.
Budget execution.
Administration of funds.
Purchasing.
Contracting.
Accounting for property.
Financial accounts and reports.

In addition, contractor and AEC field operations are inspected and appraised annually by staff specialists in the fields of supply and property management and contractor personnel.

USE OF PLUTONIUM

Mr. JENSEN. What are the problems involved in the use of plutonium for atomic power reactors?

How near are they to being solved?

(The information referred to follows:)

There is little question that plutonium can be used, essentially on an equal basis with U–235, in power reactors. The main problem is to find an economic way to use it as a spike or blend in uranium fuel elements. This is more difficult than with U–235 as the health hazard associated with pultonium is more severe, necessitating remote handling and fabrication of plutonium-bearing fuel elements.

Plutonium-aluminum alloys give promise of being an economical way to handle plutonium as a spike. Impregnation of uranium oxide with plutonium oxide shows equal promise as a way to use plutonium for uniform enrichment.

The economics of plutonium separation, fabrication and use will not be fully determined for several years but the technological problems are well along the way to being solved.

Mr. JENSEN. Can there be any really economic power from the various present concepts of atomic power reactors until and unless there is developed a peacetime use for plutonium produced by these reactors?

(The information referred to follows:)

If plutonium is purchased at its present "fuel" value ($12 per gram), it represents about a 1.5 mill per kilowatt-hour increase in the cost of power over that resulting from the present $30 per gram weapon value. There are reasons to believe that the fuel value may in time be higher than $12 per gram because of other effects such as reactivity which tend to extend obtainable burnups. The disparity of 1.5 mills per kilowatt-hour caused by purchasing plutonium at its fuel rather than its weapons value seems unlikely to be the determining factor in the production of competitive nuclear power.

Mr. JENSEN. Will it not be necessary to solve these problems if and when the need for plutonium for defense purposes declines?

(The information referred to follows:)

It is felt that a fuel value for plutonium will be established by the plutonium-uranium cycle program being carried on at Hanford and that progress is being made toward solving the technical problems associated with plutonium.

Mr. RABAUT. Have you any questions on the reactors?

Mr. FENTON. Yes, Mr. Chairman.

Mr. RABAUT. All right.

Mr. FENTON. As you know, I come from a coal mining area where we are having considerable difficulty with unemployment and have had for a number of years. Some of us are concerned about your program relating to electrical energy. We certainly do not want to work to the detriment of one segment of our economy, and still we want to be progressive. We are concerned about the problems affecting the coal industry. In my area the largest electrical energy producing industry there utilizes a great deal of coal. I don't know what is going to happen to our miners if we keep importing oil and now we come along with a project that will knock more of them out.

Mr. Chairman, may I say I don't want to prolong the hearing, I am sorry I was unavoidably detained this afternoon. I will just submit the questions and they can answer them in the record.

REACTOR DEVELOPMENT PROGRAM

Mr. FENTON. A former member of the AEC in appearing before this committee a couple of years ago put forth his program for the construction of 2 million kilowatts of atomic power reactors by 1960.

Each mill per kilowatt-hour that the new power from plants of such capacity exceeded the cost of producing electric power at modern steam plants would, at a plant factor of 80 percent, represent an annual added cost of $14 million. Under the present outlook it appears that for a number of years such additional cost may exceed 10 mills per kilowatt-hour. This would represent a loss, or subsidy if the taxpayer had to pick up the check, of some $140 million annually on the power output potential of 2 million kilowatts of atomic power reactors at 80 percent load factor.

(The answer follows:)

It is correct that 2 million kilowatts of nuclear electric generating capacity operating at an 80 percent load factor (7,000 hours per year) and a 10 mills per kilowatt-hour differential over conventional power would result in $140 million loss annually.

The determination of the annual loss is not just a question of multiplying the annual kilowatt-hour production by the estimated 10 mills per kilowatt-hour loss. The loss consists of two parts (1) a capital cost differential between nuclear and conventional plants and (2) an annual operating cost differential.

The capital cost differential for the Shippingport plant would be as high as 13 mills per kilowatt (3 mills conventional versus 16 mills for Shippingport assuming private financing and second core performance). We believe the differential would be only about 3 to 4 mills per kilowatt-hour (3 mills conventional versus 6 to 7 mills

nuclear) for new nuclear plants if a 2 million kilowatt construction program were undertaken. This would amount to a 300 to 400 million dollar additional investment in nuclear plants.

While initially the operating cost differential between nuclear and conventional plants might be about 4 mills per killowatt-hour (3 mills conventional versus 7 mills nuclear) over a 25-year plant lifetime it would be expected to average out to essentially zero because conventional fuel costs will be rising and nuclear fuel costs decreasing. It is possible that there might be as much as several mills advantage for nuclear plant operating costs provided nuclear plants are located in areas where fossil fuel costs are high and that eventually nuclear fuel costs may approach 2 mills per kilowatt-hour.

Mr. FENTON. It was indicated yesterday that the cost of Shippingport power was expected to by 60 mills per kilowatt-hour. At that rate the added cost of production from 2 million kilowatts would be over half a billion dollars annually.

(The information referred to follows:)

For the Shippingport plant electric generating costs of about 60 mills per kilowatt-hour are estimated from the first core, but this cost is expected to be reduced with the second core. Subsequent cores should result in increased fuel element performance and reduced fabrication cost.

A larger program of 2 million kilowatts would have far less unit capital operating costs than Shippingport, so that extrapolation of the Shippingport losses is not justified.

DEVELOPMENT OF SMALL-SCALE PLANTS

Mr. FENTON. Is it not logical to concentrate on solving some of the atomic power reactor problems before us through more physical research and the construction of small-scale plants, leaving these proposed large-scale plants until more of the difficulties have been overcome or solved?

(The information referred to follows:)

The Commission continues to follow the policy of developing the technology of reactor concepts through preliminary studies and designs, followed by small-scale research and experimental work. Then those concepts holding promise are carried through reactor experiments on a small scale to test their feasibility and gain knowledge and experience.

However, for some types of reactors (e. g., natural uranium with light water; gas-cooled reactors; and heavy water reactors) technical considerations require a substantial size even for testing feasibility.

Beyond the question of technical feasibility, there is also the necessity to determine the economic feasibility of various reactor types.

To do this, it is necessary to determine the cost and operational problems of large-size reactors. This can only be done by construction of large-size units.

ATOMIC ELECTRIC POWER REACTORS

Mr. FENTON. On page 51 of your justifications the first stated objective of your civilian reactor development program is—

To achieve safe, reliable, and economically competitive production of electric power from reactors as soon as possible in the United States.

It is in connection with this objective and the question of what is competitive power that I would like to propound a few questions.

First, I think we must inquire into the present-day cost of producing power from modern steam electric plants. Information from the Federal Power Commission discloses that there were 52 large steam electric plants operating in the United States in 1957 that had an efficiency of 10,000 British thermal units per kilowatt-hour or lower. The most efficient plant reported was the 425,000 kilowatt Kanawha River steam electric plant of the Appalachian Electric Power Co. in West Virginia with a fuel rate of 9,118 British thermal units per kilowatt-hour operating at a plant factor of 81 percent. This plant burns coal that costs 18.60 cents per million British thermal units which amounts to 1.70 mills per kilowatt hour. With an operation and maintenance cost of 0.32 mills per kilowatt-hour, the total production cost exclusive of fixed charges and taxes was 2.02 mills per kilowatt-hour.

The reports on the 20 most efficient plants show that fuel cost varied from 17.17 cents per million British thermal units to 36.90 cents per million British thermal units, and the total production cost, exclusive of fixed charges and taxes, ranged from 1.94 mills per kilowatt-hour to 3.98 mills per kilowatt-hour.

Based on an analysis of nationwide reports, the FPC staff have developed a technical memorandum that shows the national average fixed charges for the cost of money, interim replacements, depreciation, insurance, and taxes amounted to 13½ percent of the plant investment. Of this amount 6.03 percent represented Federal, State, and local taxes.

For the 20 most efficient steam electric plants the investment cost per kilowatt-hour varied from $104 to $188 per kilowatt of capacity. Plant factor operation varied from 71 to 97 percent. Using the national average fixed charges figure of 13.5 percent and a plant factor of 80 percent, the added cost per kilowatt-hour to cover the fixed charges would vary from 2 mills to 3.8 mills.

On the foregoing basis the total cost of producing electric power from modern steam electric plants varies from around 4 mills per kilowatt-hour up to 7.6 mills per kilowatt-hour. (Incidentally, these modern high-efficiency plants are located from coast to coast.) The higher cost is accounted for almost entirely by the higher unit cost for fuel.

Now, in comparison with these costs of producing power from the most modern steam electric plants, what is the latest estimated cost of electric power in mills per kilowatt-hour from each of the concepts of atomic power reactors included in this bill or presently under construction, negotiation, or active consideration by AEC and industry? On any plants that are presently in actual operation such as the Shippingport plant, give latest actual operating cost in mills per kilowatt-hour.

(The information follows:)

In comparing costs of power from conventional and nuclear powerplants, several points must be borne in mind:

(1) Present conventional power costs average from 4 to 7.6 mills per kilowatt-hour including both old and new stations. If only new fossil-fuels stations are considered and capital costs are assumed at $150 per kilowatt, the total power costs would be greater than 6 mills per kilowatt-hour (3 mills per kilowatt-hour for the capital cost and 3 or more miles for fuel, operation, and maintenance cost).

(2) Nuclear power cost estimates generally quoted today of 11 to 14 mills per kilowatt-hour are for full-scale commercial stations coming into operation in the period 1960–65. If conventional costs were compared for the same period, capital costs for conventional stations would amount to more like 4 mills per kilowatt-hour for capital cost with total power costs at 8 or more mills per kilowatt-hour. The additional increase is due to expected rising fossil-fuel costs.

Estimates of the cost of power from nuclear power stations are subject to speculation and can vary considerably depending not only on the specific concept but the plant size, and the assumed fuel element performance and fabrication cost and other fuel cycle costs. Table 1 gives some generalized estimates. It will require actual construction and operation of reactors of different types to show the merit of nuclear plants and the merit of specific types.

TABLE 1.—*Generalized estimates of nuclear electric generating costs from slightly enriched water reactors* [1] *assuming private financing*

[Mills per kilowatt-hour]

Cost category	Experimental plants,[2] 1958–60		Commercial plants (200 MWE)	
	PWR	EBWR	1960–65	After 1965
Capital	23	22	6–7	4.0
Operation and maintenance	3	8	1	.5
Fuel	38	22	4–6	2.0–4.0
Total	64	52	11–14	6.5–8.5

[1] There is insufficient information on other types to develop significant cost information, except possibly for the gas-cooled reactor. For this reactor design, estimates for the natural system show higher capital costs and total power costs in the order of 14 mills per kilowatt-hour. For the enriched system, costs in the order of 12 mills per kilowatt-hour are estimated.

[2] Based upon the estimated first core performance.

NOTE.—In all cases above plutonium credit is taken at $12 per gram, or an estimated 1 mill per kilowatt-hour.

Mr. FENTON. If the initial fuel charge is not carried as a capital cost, indicate estimated cost and basis for exclusion.

In order to be comparable, the same percentage of fixed charges as used by FPC for private financing of steam electric plants should be applied to the capital cost of the atomic powerplants.

Inasmuch as fixed charges represent a large segment of the cost of electric power, I believe the record should contain some information on the estimated capital cost per kilowatt of constructing the various atomic power concepts now underway or being actively considered. Will you furnish for the record the latest estimate of the cost per kilowatt of constructing each of the atomic power concepts now under construction or being actively considered for early construction? Perhaps you would like to add to this the most optimistic hoped-for future cost per kilowatt of future plants of each promising concept.

(The information follows:)

The cost per kilowatt is influenced not only by the type of reactor, but also by the design philosophy, the state of development of the particular concept, the size of reactor, and other less tangible considerations. Hence, it would be misleading to merely present a tabulation of unit capital costs based on differences in reactor type without a precise knowledge and evaluation of the other factors involved.

Considering size, for example, experience to date indicates a range in costs from about $1,000 per kilowatt for a 10 MWE plant to $350 per kilowatt for a 200 MWE plant or lower.

Further development of technology and construction of prototype reactors is necessary before realistic evaluation can be made of the relative economic merits of different reactor types.

Mr. FENTON. In estimating the operating cost and the resulting cost per kilowatt-hour of electric power from each concept, indicate what credit, if any, is given to the production of plutonium or any other byproduct. Express in mills per kilowatt-hour in addition to any other value used.

What is the relative present cost of producing the various grades of plutonium compared with the plutonium credits or buying back values used in arriving at the net cost of electric power production from atomic energy in each of the concepts?

(The information follows:)

It is impossible to assign a cost for producing plutonium in power reactors unless the value of power is fixed.

In the case of plutonium-only producers, the cost of plutonium is influenced by (1) the type of financing and operation (Government or private) and (2) the length of the military requirements for plutonium.

In our evaluations of nuclear power costs the plutonium credit is taken at its fuel value of $12 per gram. Roughly, a plutonium credit of $10 per gram will reduce power costs by about 1 mill per kilowatt-hour.

Based upon a 10-year requirement only, private operation and financing, and power valued at about 7 mills per kilowatt-hour, the cost of plutonium production would be in the order of $70–80 per gram, regardless of grade.

SIZE OF CIVILIAN POWER REACTOR PROGRAM

Mr. BUDGE. I note at the bottom of page 13 of Mr. Floberg's statement the following:

> Projects for the development of civilian power reactors will constitute the largest single category in the entire reactor development program in 1959. The estimated cost for civilian power projects in that year are $113,590,000 and about $31 million more than in 1958.

What is the reason for this increase?

Mr. FLOBERG. Mr. Budge, this represents an increased emphasis on the program. I would not describe it as a new emphasis but a good many different parts of the program are being stepped up in intensity.

The fuel cycle program which was previously discussed is one example.

Mr. BUDGE. In the past, has it constituted the largest single category?

Mr. FLOBERG. Certainly not in every year.

Mr. Davis, would you respond to that specifically.

Mr. DAVIS. This is really the first year in which it will be the largest single category.

Mr. BUDGE. Why does that occur? Why has it not been before, or why is it now?

Mr. FLOBERG. Military reactors have proportionately taken a higher percentage of the effort before.

Mr. BUDGE. Military power reactors?

Mr. DAVIS. Yes, sir. Reactors for military propulsion, either Naval or aircraft. The relative shift in emphasis indicates an increased amount of intensity being put into the civilian reactor programs.

Mr. BUDGE. Is that as a result of any foreign activity? What does it stem from?

Mr. DAVIS. It is really the result of the passage of time, the degree of development of the technology, the rate of solution of problems in the past, the degree of economic promise of the various concepts, the stimulation of interest by potential purchasers, and a great number of other contributing factors.

CANADIAN WESTINGHOUSE REACTOR

Mr. BUDGE. With that kind of explanation, I wish somebody would comment to the committee on this article which the chairman read relative to the Westinghouse of Canada's proposal to generate atomic electrical power at 6.5 mills.

What is the Commission's appraisal of that statement?

Mr. DAVIS. I think, as I tried to point out, when the question was raised before, that these are estimates which have been made by the Atomic Energy Company of Canada, Ltd., and by the Canadian General Electric Co. They are based on their estimates of the cost of constructing power reactors. We have looked at the cost estimates, at least those published by AECL, which I think are based on the Canadian General Electric work. They appear to us to be rather low estimates for the cost of constructing the reactor they have in mind.

Mr. BUDGE. Rather low. Now that certainly is a far cry from the word Mr. Floberg used. Where is their error?

Mr. DAVIS. They are estimating they can build a 200,000 electrical kilowatt plant for $50 million.

I might add that they have recently completed a research reactor of 200 electrical kilowatts which cost $58 million, which is in general quite similar to the power reactor except that it operates in low temperatures and it is of necessity only one-quarter in size. They have not yet built any kind of reactor experiment or prototype reactor for the type of reactor for which they are making these estimates. Many of the hard facts we have learned about the actual cost of building reactors have come about as a result of our building reactor experiments and prototype reactors, such as the pressurized water reactor.

Mr. BUDGE. What is your estimate of the cost of building that plant?

Mr. DAVIS. I have not attempted to make any estimate of this. From just looking at the numbers which I had a few weeks ago, I would guess it would cost about $70 million rather than $50 million. This is purely a guess and not an estimate in any sense of the word.

Mr. BUDGE. Even that would not bring the kilowatt cost for producing a kilowatt-hour of electricity anywhere near what your estimates are.

Mr. DAVIS. The other factor that enters into the 6.5 mills is the question of how they assume the plant is to be financed. Their assumptions with respect to financing are that it will be built as an entirely

Government-owned plant with only a minimum rate of interest and long-term amortization.

If this plant were built in the United States by a privately owned utility, the cost of power from it even based on their estimates would be more like 9 or 10 mills per kilowatt-hour. I believe in the excerpt that the Chairman read that there was mention of the cost going as high as 14 mills per kilowatt-hour on unfavorable assumptions with respect to financing.

COST OF POWER FROM AMERICAN PLANTS

Mr. BUDGE. What is your estimated cost to produce a kilowatt-hour of electricity under the type plant which the Commission intends to build?

Mr. DAVIS. I might add we have recently had some rough estimates made by the DuPont Co. in connection with their studies of a heavy water moderated and cooled reactor, of the same general type, but mechanically a little different than the one considered by the Canadians, and if I recall correctly their estimates of the cost of power from a plant of 100 megawatts rather than 200 would be something in the range of 15 to 18 mills per kilowatt hour on the conventional United States financing.

Mr. BUDGE. What is the 60-mill figure we had kicking around here yesterday?

Mr. DAVIS. This is for the Shippingport pressurized water reactor on the assumption that it runs only at 60,000 kilowatts and on the assumption that the fuel lasts only as long as the minimum designed lifetime.

Mr. BUDGE. Even under optimum circumstances you said that would never get below 30, did you not?

Mr. DAVIS. My guess is that it would come down to something like 30 mills. This is a highly experimental plant. Several million dollars were spent, for example, in providing instrumentation that would not go into a commercial-type plant. There are many experimental features of it that would not be duplicated. I should also point out that since it was originally started 4 years ago many of the design decisions were made 2 or 3 years ago, and we have since learned a great deal about nuclear powerplants. The timing of the design and construction of the Shippingport pressurized water reactor has been the same period during which we have carried out the bulk of our whole civilian power reactor development work.

CANADIAN WESTINGHOUSE REACTOR

Mr. BUDGE. I assume that Westinghouse of Canada is an affiliate in some way of the Westinghouse Corp. in the United States.

Mr. DAVIS. I believe that is GE.

Canadian General Electric Co.?

Mr. BUDGE. Is it General Electric instead of Westinghouse?

I assume in that event it would be connected with General Electric of this country, would it not? This statement that the chairman read says, "Canadian Westinghouse Electric." Who is that?

Mr. DAVIS. There is a Canadian General Electric Co. that has been doing most of this work. I assumed this refers to the joint program

between the ACL and the Canadian General Electric Co. There may be something else in addition; I am not sure.

Mr. BUDGE. I am just wondering if you are familiar with this particular proposal that was outlined in the statement which the Chairman read. This very clearly says, "Canadian Westinghouse Electric."

Mr. DAVIS. Let me put it this way: I am familiar with the work which has been done by the Atomic Energy Company of Canada. This has been largely conducted jointly with the Canadian General Electric Co.

I am familiar with the work that has been done there. I am not familiar with the specific quotation from the newspaper which is the source of this particular question and I cannot say offhand whether the Canadian Westinghouse Co. may have also made some design studies based on this same work.

However, I believe it is the same reactor and is based on the same design and cost studies made by the Atomic Energy Company of Canada in either case.

Mr. BUDGE. Has anyone in the Commission ever attempted to contact this company to see how it ascertained this cost of production?

Mr. DAVIS. I do not believe we have attempted to contact the company. As I said, we have been working quite closely with the Atomic Energy Company of Canada, Ltd., which is our counterpart in Canada.

Mr. BUDGE. As a matter of fact, the Atomic Energy Commission has a number of contracts with Westinghouse, has it not?

Mr. DAVIS. In the United States, yes, sir.

Mr. BUDGE. I assume this is an affiliate company. I hope that we can get a little better statement in the record as to the Commission's analysis of this item that appears in the Federal Power Commission News Digest.

Under average conditions, assuming a media situation, what do you estimate right now it will cost to produce electric power from one of the type reactors that you would favor building for commercial production in the United States?

Mr. DAVIS. I believe that the American companies which are willing to build the large-size boiling and pressurized water reactors can now propose plants that will make power for the order of 10 to 11 mills per kilowatt-hour. They could today start to build plants which when completed 3 or 4 years from now would actually make power at about this level.

Mr. BUDGE. How long do you estimate it will be before that cost will drop to the neighborhood of 5 mills?

Mr. DAVIS. Mr. Budge, I am not sure that nuclear power is necessarily ever going to drop to 5 mills. If you were to ask me how long it would be before it could compete with conventionally fueled plants in areas of the United States which have relatively high fuel costs, which means 7 or 8 mills, I would say that probably within 5 years people will be able to start plants which will be competitive on that basis. But 5 mills is an extremely low figure, and I am not sure that within the foreseeable future it can be met with nuclear power.

CONVERTIBLE PRODUCTION REACTOR FACILITY

Mr. BUDGE. I think that is a very interesting and encouraging estimate. You have a request in your authorization bill for the so-called

convertible-type plant that you want to build at Hanford at a cost of $145 million. If you convert that to the generation of electric power, how much is that going to cost per kilowatt-hour in mills to generate power?

Mr. Floberg. I think we ought to ask Mr. Bloch to answer that question. He is more familiar with that particular project.

Mr. Bloch. That convertible reactor is a sort of production reactor. It is the result of a study that included the possibility of the generation of by product power to see whether by generating power as a byproduct you might reduce the cost of the plutonium product as compared to a straight plutonium producer.

Mr. Budge. How do you figure that out in an area that has two mill power now in the light of the statement you have just made?

Mr. Bloch. Sir, the study was made as a result of an authorization placed in the Atomic Energy Commission bill last year which directed the Commission to undertake studies of a large-scale production reactor and to look at both single- and dual-purpose reactors. This study was made and was submitted to the Joint Committee on the 1st of April as required by the authorization. The study gave estimates of time, cost, and development problems associated with a large-scale production reactor.

It also gave estimates for the same general type reactor if it were built, designed, and operated at higher temperature and higher pressures so that it could generate power.

The study was made strictly in the context of a plant built at Hanford based on Government financing.

Mr. Floberg. I would like to point out for the record, Mr. Budge, that this project was not in the current authorization bill as initially submitted to the Congress. This particular project was added to the authorization bill by the Joint Committee.

Mr. Budge. I take it then this is not something that the Commission is actually crying to build; is that correct?

Mr. Floberg. I do not think that is a fair restatement of my statement.

Mr. Budge. You have good adjectives. You give me one.

Mr. Floberg. This is a project which the Commission is considerably interested in. It is the type of reactor that does have considerable technical interest. The principal interest of the Commission in the reactor actually, I believe, is in its plutonium production capability.

Mr. Budge. What is the estimate of the cost of the plant which the Commission wanted to build and which you requested from the Bureau of the Budget?

Mr. Floberg. It was $120 million in its initial form as we requested it of the Bureau of the Budget. This was to be a production only reactor. Our initial concept of it was that. We subsequently learned more about the dual-purpose type.

Mr. Budge. What is the total cost of this plant that is now being discussed?

Mr. Floberg. It is $145 million.

Mr. Budge. When you convert it to power, how much will it cost?

Mr. Floberg. If it is ever converted to power?

Mr. Bloch. Interest at 3 percent per year on a plant investment of $211 million, assuming a 4-year construction period and amortization over a 25-year period after that, would total $108 million. On a plant investment of $260 million, using the same assumption, the interest would total $133 million. The current estimates go about like this: A straight plutonium reactor would cost about $120 million. A reactor built which could later be converted so that the power could be added would initially cost about $145 million. If 300,000 kilowatts of electrical power were added, the total cost was estimated at about $211 million. If 700,000 kilowatts of electric power were added, the total cost would be on the order of $260 million.

Mr. Budge. Have you arrived at your kilowatt-hour cost of producing electricity from that plant by simply using the amounts which are necessary for power, which are added to the original cost of construction as a plutonium plant? The ones that are chargeable solely to the electric power producing features?

Mr. Bloch. The study was aimed at determining whether or not by adding power you could reduce the cost of producing plutonium. So the study assumed a fixed price for the electric power of 3.58 mills per kilowatt-hour on the basis of advice from the Bureau of Reclamation and the Federal Power Commission. That is a fixed price. We developed from that what the plutonium would cost from these various types of reactors.

Mr. Budge. What happened to your plutonium cost as between the plant without any power features and the plant with 300,000 kilowatt power features and the plant with 700,000 kilowatt power features?

Mr. Bloch. On the basis of the assumptions that were used, the study indicated that you had to have something more than 300,000 kilowatts to get sufficient power revenue to reduce the cost of plutonium as compared to a straight plutonium producer. If you generated 700,000 kilowatts it would reduce the cost of plutonium substantially on the assumption that you ran the plant for 25 years. The costs are also affected by what you assume to be the duration of a weapons-production program. In other words, whether you assume you need weapons grade plutonium for 15 years, 10 years, or 25 years.

Mr. Budge. What is your cost of production of the power which you propose to sell at 3.58 mills in the latter two circumstances? How do you sell it for 3.58 mills and subsidize the production of plutonium?

Mr. Bloch. You are comparing the cost of the Government-produced plutonium. You are trying to weigh the building of a straight production reactor which does nothing more than produce plutonium for the duration of program you assume and you arrive at a certain cost of producing weapon grade plutonium in a Government reactor.

Mr. Budge. Before you get any benefits, you have to go above a 300,000-kilowatt plant; is that correct?

Mr. Bloch. This is what the study indicated. I would like to emphasize that this study was strictly for a reactor at Hanford on the basis of the Government doing the job. The study did not include any extensive look at what this concept would be in other parts of the country or on another basis. It was really studied as a production problem, not from the standpoint of the economics of this concept as a power producer.

Mr. Budge. Now taking the original concept about the single-purpose plutonium plant, what is the comparative cost of plutonium from

that type of plant and the one that is proposed with initial cost of $145 million?

Dr. LIBBY. We can give you all these numbers for the record if you like.

Mr. BLOCH. We can supply that. I would have to calculate that, sir.

Mr. BUDGE. I wish you would also supply for the record a statement of what happens to this expenditure in the event 10 years from now or 5 years from now the Government decides that it does not need a further supply of plutonium. Then where are we on the power situation.

Mr. BLOCH. All right, sir. The straight production reactor will have to be shut down.

Mr. BUDGE. What I am getting at, of course, is what the cost of generation of the power will be if you plan to sell it at this 3.58 figure.

(The statements requested follow:)

STUDY OF SINGLE AND DUAL PURPOSE REACTORS

In the studies which have been made, the single purpose plutonium-only reactor has been compared with the dual purpose types; the basis for evaluation used has been the unit cost of the weapons material produced. Plutonium unit cost is regarded as of primary significance because the production of weapons material would be the primary purpose for constructing the reactor. In these studies, which were directed toward a determination of whether or under what conditions the recovery of byproduct power would reduce the cost of weapons material, a power value of 3.58 mills per kilowatt-hour was employed. Advice was received from the Federal Power Commission and the Bonneville Power Administration that this value represented a reasonable and conservative estimate of the worth of power from such a reactor. The value of 3.58 mills is lower than that used, for example, by the Corps of Engineers in evaluating conventional multipurpose projects, in recognition of the fact that a dual purpose reactor would represent a less firm power supply because of the need for periodic and sometimes unanticipated shutdowns.

In comparing the unit costs of plutonium for use in weapons from the various reactor designs, the significant parameters for convertible reactors are: the duration of the military requirement, the quantity of electric power generated after conversion to dual purpose operation and the timing of the conversion relative to the reactor's estimated useful life. Consideration was given in the studies to two alternate periods for the duration of a military requirement—10 and 25 years of plant operation—and to two levels of electric power recovery—300 electric megawatts and 700 electric megawatts. The useful life of the plant in all cases was taken as 25 years. Should the military requirement not extend through the useful life of the plant, the single purpose reactor would be shut down, whereas the dual purpose unit would continue to operate as a power reactor with some byproduct fuel use plutonium (credited in the studies at $12/GM). Using the cost of plutonium from the single purpose reactor during a 10 year production campaign as index 100, the unit costs of plutonium from the convertible reactors are shown on the following table I. It will be noted that the shorter the duration of the military requirement and the longer that conversion to dual purpose operation is deferred, the higher will be the unit cost of the product.

If it is desired to determine the cost of power recovered from a dual purpose reactor, calculations may be made which assign a value to the weapons use plutonium equal to the cost of producing plutonium from a single purpose, production-only reactor. Here again the duration of the military requirement and the timing of the conversion of the convertible reactor to dual purpose operation affect the cost of power. The results of these calculations are given on the following table II. As before, the shorter the production campaign and the longer the delay in plant conversion, the higher will be this cost of power.

These estimates of plutonium and power costs should be recognized as quite preliminary and subject to modification as development work proceeds and additional information is obtained.

The information contained in the following tables, like the study, was based strictly on the context of a plant built at Hanford with Government financing.

TABLE I.—*Cost of plutonium—Power value equals 3.58 mills per kilowatt-hour (excludes interest)*

	10-year requirement	25-year requirement
Unit cost of plutonium, index basis:		
I. Single purpose	100	79
II. Convertible, not converted	117	90
III. Convertible, converted to 300 electric megawatts:		
(*a*) In 0 year [1]	111	75
(*b*) In 2 years	115	77
(*c*) In 5 years	122	80
IV. Convertible, converted to 700 electric megawatts:		
(*a*) In 0 year [1]	70	54
(*b*) In 2 years	80	58
(*c*) In 5 years	95	64

[1] Does not include credit for current construction.

TABLE II.—*Cost of power—plutonium value equals cost of plutonium from plutonium only reactor (excludes interest)*

[In mills]

	10-year requirement	25-year requirement
I. Convertible, 300 megawatts:		
(*a*) Converted in 0 year [1]	4.31	2.97
(*b*) Converted in 2 years	4.67	3.23
(*c*) Converted in 5 years	5.40	3.78
II. Convertible, 700 megawatts:		
(*a*) Converted in 0 year [1]	2.73	1.83
(*b*) Converted in 2 years	2.96	2.00
(*c*) Converted in 5 years	3.39	2.28

[1] Does not include credit for concurrent construction.

TABLE III.—*Power-only operation of Hanford new production reactor*

Reactor case	Unit cost of power—mills per kilowatt-hour (Pu value=$12 per gram)	
	No interest	3 percent interest
300 electric megawatts	7.5	9.5
700 electric megawatts	4.2	5.3

REACTORS IN FOREIGN COUNTRIES

Mr. BUDGE. Last year, during the hearing and then on the floor of the House of Representatives when this bill was being considered and when the authorization bill was being considered, we heard a great deal about the plants which were being built in foreign countries under contracts which were being executed for deliveries in other foreign countries. What is the up-to-date situation on that?

Mr. DAVIS. I outlined the situation in Italy.

Mr. BUDGE. Has there been an actual sale and then a delivery of any such plant?

Mr. DAVIS. Of any powerplant, as such?

Mr. BUDGE. Yes.

Mr. DAVIS. No, sir.

Mr. BUDGE. Has there been any contract signed to produce such a plant, to build such a plant for delivery in another country?

Mr. Davis. There is a contract to build a small, pressurized-water reactor for Belgium, I believe—12,500 kilowatts, as I remember. There is also the conditional contract that I mentioned with respect to Italy.

Mr. Budge. The Italian Parliament adjourned without ratifying that arrangement, did it not?

Mr. Davis. I am not sure about the arrangement. They have not passed an atomic-energy act, among other things, in Italy.

Mr. Floberg. They ratified the bilateral agreement.

Mr. Budge. The information I have is that the Parliament adjourned without ratifying the bilateral agreement.

Mr. Floberg. If so, I stand corrected, but I thought I was right on that, Mr. Budge.

Mr. Budge. Is there any other contract for the delivery of an electric power reactor built in a foreign country for delivery to another foreign country other than this one for delivery to Belgium which you just mentioned?

Mr. Floberg. And a conditional one for Italy.

Mr. Budge. How large is the conditional one for Italy?

Mr. Davis. 134,000 kilowatts.

Dr. Libby. It is a duplicate of the Yankee plant.

Mr. Budge. Perhaps the ratification occurred since this magazine was published in April, but the magazine—I suppose you are familiar with it—the Foreign Memo, published by the Atomic Industrial Forum, says that the Italian Parliament adjourned without ratifying.

Dr. Vander Weyden. The bilateral agreement with Italy was ratified on the 15th of April.

Mr. Budge. Those are the only two contracts that have been signed, that are in the process of being signed?

Mr. Floberg. Other bids have been submitted.

Mr. Davis. There are negotiations which, so far, have not resulted in contracts, to the best of my knowledge, between Great Britain and Japan and Great Britain and Italy.

Mr. Budge. A year ago, we heard quite a lot about those contracts; that they were supposed to have been signed and deliveries made. But now, you say, even the contracts have not been signed.

Mr. Davis. As I understand the situation, they have signed contracts for assistance and design work, but not for the actual construction of the plant.

In the case of the Japanese plant apparently the Japanese have called for a new set of bids and are not considering the ones which were submitted earlier.

As Mr. Floberg has pointed out, there are a great number of bids that have been submitted recently to various countries. A syndicate in Belgium has recently taken proposals for power reactors. There are a number of things of this sort going on, but the whole situation is still in a fairly fluid state, and I do expect that by a year from now there will be contracts for reactors both from the United States and from the United Kingdom in various countries.

Mr. Budge. Summarizing it, the situation is about the same as it was 12 months ago?

Mr. Davis. I think it is getting nearer toward a solution but one of the characteristics of all of these foreign projects has been a very

great deal of studying, taking bids, taking new bids and things of that sort. They simply have not acted very rapidly in any case that I am aware of.

ARMY PACKAGE POWER REACTOR

Mr. BUDGE. Last year some members of this committee including myself were privileged to look at the reactor which was about to be made critical at Fort Belvoir, and which I understand is now in operation. What is your best estimate now of the cost of generating electric power in that kind of plant?

Mr. DAVIS. Do you mean that size or that particular type? This is a pressurized water reactor.

Mr. BUDGE. Both. Does the cost increase or decrease with a larger size?

Mr. DAVIS. I believe that for a plant of that size built in the United States, which is not the intended location of plants of that sort, power costs are of the order of probably 20 to 25 mills. This is for a 2,000-kilowatt plant, which is an exceedingly small plant. This same type of reactor—the pressurized water reactor which is similar to the Shippingport reactor—is in fact the basis for several of the bids on large-scale plants from 150,000 to 200,000 kilowatts which are being made abroad and where the costs anticiated are of the order of 11 or 12 mills per killlowatt-hour.

Mr. BUDGE. Actually, you can increase the capacity of that plant at Fort Belvoir just by installing a new core, can you not, a larger core?

Mr. DAVIS. We probably would be able to get more heat out of the core but we would have to install additional piping and turbo-generators to produce additional power.

Mr. BUDGE. But your costs would go down considerably over the building of a new plant?

Mr. DAVIS. If we were to build a new and larger plant, the costs would go down.

Mr. BUDGE. Suppose you built one in the nature of 100,000 kilowatts; what is your cost going to be?

Mr. DAVIS. For a pressurized-water-type reactor?

Mr. BUDGE. Yes.

Mr. DAVIS. I would guess on that size the cost might range somewhere between 12 and 13 mils, something of that sort. This depends a great deal on the financing, the load factor and the circumstances under which it was built.

Mr. BUDGE. Let us assume what kind of financing?

Mr. DAVIS. I am talking here about private utility financing, fixed charges of the order of 14 or 15 percent per year and load factors of about 80 percent.

Mr. BUDGE. What type of reactors do you feel would go down to 7 or 8 mills per kilowatt-hour?

Mr. DAVIS. I think ultimately there will probably be a fairly substantial number. I think in all probability the boiling-water reactor and presurized-water reactor and the organic moderated reactor, or at least one of these, will be capable of doing this within the next few years.

LIQUID METAL FUEL REACTOR

Mr. BUDGE. In that connection, the following is the testimony of Mr. Thomas H. Johnson, of Raytheon Manufacturing Co., before the Joint Committee earlier this year.

Perhaps the most valuable contribution I can make to these hearings is to give a specific example of an idea that could, if pursued, break through the cost barrier which now obstructs our progress in atomic development. For 2½ years, Raytheon has been exploring a design of a liquid metal fueled gas-cooled reactor for the generation of electricity. If successful, this concept would outmode other concepts now being designed for earlier operation and it would advance the United States a long way up the road toward economically competitive nuclear power.

What is your comment on that proposal?

Mr. Davis. We have reviewed the particular proposal. It is mainly a question of a quite difficult and long-range materials development program. It is, I think, quite true that if this were done successfully, it, along with other types of reactors that we are working on, could reduce costs below those attainable with the boiling pressurized water or organic moderated reactors. This is going to take quite a long time. It is not something that is going to be competitive in the same area of time with ones that are now quite well along in development.

Mr. Budge. Are you saying it should be deferred?

Mr. Davis. I am not saying it should be deferred. I am saying the development will inevitably take a considerable length of time.

Mr. Budge. Why should it not be pushed? The testimony would indicate that it would take slightly over $2 million to find out.

Mr. Davis. We are still considering supporting some of the research work that is proposed on the material.

Mr. Budge. Do you have anything in your program for fiscal 1959 for that type of research?

Mr. Davis. We have money in the program in the engineering development branch for work on advanced types of reactors and also some money in the civilian power reactor budget for development work on advanced types of reactors.

If this work is done it would come out of either one of those items, probably the engineering development branch funds.

Mr. Budge. Does the Commission intend doing any work on this type of project?

Mr. Davis. Whether we will pursue this particular contract proposal or not is a desicison that, to the best of my recollection, we have not yet made.

Mr. Budge. Under your budget submission, do you have latitude so that you can switch into this field in the present budget proposals?

Mr. Davis. We certainly have latitude here, and, of course, as I pointed out, we do have funds specifically earmarked which are used to support this type of work.

Mr. Budge. And which could be used for this particular investigation should the Commission so decide?

Mr. Davis. Yes. We get, I would say, literally dozens of proposals of about this sort every year and we have to try to sort out those which seem to have promise and support them to the point where they might be either demonstrated not to be worth while or to where they can be made into more of a project.

Mr. Budge. Of course, you are in a much better position to evaluate those things than the members of the committee, but this testimony seems to be encouraging in talking about a breakthrough.

Mr. Davis. We have discussed it several times as well as many other proposals which come to us in almost precisely the same forms and with almost the same claims.

Mr. BUDGE. I have just one further question, Mr. Chairman. That is the sentence appearing toward the bottom of page 13 of Mr. Floberg's statement.

Investigation will also continue on advanced compact reactor systems suitable as a mobile source of electric power and for propulsion of very large land vehicles.

Will you expand on that a bit for me.

Mr. DAVIS. There is a need in the Department of Defense for compact and easily transportable power sources which are not tied to a source of cooling water as we discussed earlier and which can be moved around and could be used to supply power either at various sites or which could even be used to power a large land train or snow train or something of that nature.

The type of reactor that we are considering here we believe can be made quite light and quite compact.

This again, however, is quite a long-range development program and one which will just be getting started this year as a development program.

Mr. BUDGE. What would be your concise definition when you have in mind a very large land vehicle?

Mr. DAVIS. As you know, there has been, at least one example of this, the type of thing that the LeTourneau Co. has built for the Transportation Corps of the Army which is a quite large vehicle. I do not recall offhand the dimensions of it but it is an overland vehicle composed of quite a number of cars, perhaps 8 or 10, which are powered presently by conventional engines and which are used to transport either personnel or supplies over snow.

Mr. FLOBERG. It is a trackless train. The tires are almost as big as this room.

Mr. BUDGE. Do you have any comparative costs as to that kind of propulsion compared with conventional means of propulsion?

Mr. DAVIS. There have been studies made by the Transportation Corps which, as I recall, showed that if the development could be made, and this is, of course, a considerable reservation, it would, because of the fact that you would not need to carry most of your load in terms of fuel, be quite economical by comparison with other types of propulsion.

Mr. BUDGE. I wish you would put a short statement in the record sort of amplifying what this type of program is going to be.

That is all I have, Mr. Chairman.

Mr. RABAUT. All right.

(The statement requested follows:)

A compact reactor study program consisting of three independent industrial studies under lump-sum contracts were commenced in March 1958 and will be completed in December 1958. These studies as discussed in AEC press releases dated October 16, 1957, and January 24, 1958, will recommend reactor systems showing promise, after development, of meeting known military needs for a power reactor of up to several thousand horsepower output, of extreme compactness and minimum operating weight. Such a reactor might be utilized with power conversion equipment of the gas turbine or liquid metal turbine type to make up a mobile powerplant of wide utility in military situations. Applications include easily transportable electric generation units, railroad locomotive propulsion, off-road train propulsion, or any mobile plant required in the stated power range. The plans for fiscal year 1959 ($500,000 included in AEC estimate)

involve carrying out the study program to completion, evaluating the recommendations and selecting the basic system of interest, and initiating a low level of laboratory research and development in the most pressing problem areas to establish guides for the most efficient, orderly, and economical development effort if such an effort is justifiable and authorized.

Biology and Medicine Program

Mr. Rabaut. We will take up the biology and medicine program. We will insert pages 126 through 149 in the record.

(Pages 126 through 149 follow:)

Biology and Medicine Program—Operating Expenses

Program statement

Estimate, fiscal year 1959	$43,000,000
Estimate, fiscal year 1958	36,000,000
Increase	7,000,000

Mindful of the responsibilities of the Atomic Energy Commission and of the widespread public concern with atomic hazards, particularly fallout, as expressed through the hearings held in the spring of 1957 before the Joint Committee for Atomic Energy, the creation of the United Nations Scientific Committee on the Effects of Atomic Radiation and similar groups in other countries, and aware of the growing need for biochemical knowledge applicable to foreseeable power applications of atomic energy, a review has been made of the total biology and medicine program. It is recognized that the Commission must make both a basic approach to the peaceful biomedical applications of atomic energy and, at the same time, extend its program to answer the urgent questions of today and the immediate future.

Each significant advance in the atomic-energy program has made fresh demands upon the Commission without relieving it of previous responsibilities. Furthermore, more detailed answers to increasingly complex problems are demanded. It is believed that the various biomedical programs should be expanded as planned, and that the dollar amounts are realistic, and it is considered that adequate manpower is available.

In the present state of world political conflict, there is a great urgency to obtain more definite information about fallout and the effects of ionizing radiation, whether from atomic-weapons tests, reactor incidents, or normal atomic-energy operations. The program expansion budgeted herein reflects this urgency, while at the same time maintaining a properly balanced effort in the peaceful application of atomic energy in the biomedical sciences. The budget, therefore, provides for initiation, expansion, or reemphasis in those areas where greater efforts are required in the fulfillment of planned objectives.

(1) High priority will be given to the entire program of radioactive sampling and analysis especially the stratospheric program, for the primary purpose of determining the extent of worldwide contamination and to enable more accurate estimates of future accumulations.

(2) More effort will be placed on long-term (life span and/or 2 to 3 generation) studies for the determination of the effects of ionizing radiation, whether from internal emitters or induced by whole-body irradiation from external sources. The studies will emphasize both somatic effects (life shortening and cancer, including leukemia) and genetic effects, including developmental effects.

(3) Greater emphasis will be placed on studies which can be done in humans, both from the genetic standpoint and radiation-induced cancer and shortening of life span. Thus there will be increased efforts in all aspects of human genetics, the long-term epidemiological program of the Atomic Bomb Casualty Commission in Japan, and the studies of persons who have received radium, thorium, and other radionuclides accidentally or for medical diagnosis or treatment.

(4) New developments on the therapy of radiation injury will be capitalized on to the extent and consistent with scientific manpower availability.

Summary of estimates by category

Category	Actual, fiscal year 1957	Estimate, fiscal year 1958	Estimate, fiscal year 1959
1. Radiation effects on biological systems	$11,045,400	$12,114,000	$15,073,000
2. Combating radiation detrimental effects	1,846,851	2,097,000	2,487,000
3. Beneficial applications of atomic energy	8,931,662	9,911,000	10,476,000
4. Biomedical problems in atomic energy operations	6,338,817	7,713,000	9,858,000
5. Civil effects test program	497,202	665,000	900,000
6. Dosimetry and instrumentation	1,842,555	1,993,000	2,375,000
7. Equipment not included in construction projects	1,017,497	1,507,000	1,831,000
Total biology and medicine program	31,519,984	36,000,000	43,000,000

JUSTIFICATION OF CATEGORIES

1. Radiation effects on biological systems, $15,073,000

(a) Medical research

Fiscal year 1957	$4,892,696
Fiscal year 1958	5,124,000
Fiscal year 1959	6,160,000

The requested increase in this category is required to support a much needed expansion of studies on radioisotopes which have been incorporated into the tissues of animals and man. This results from the increased interest in this field as it relates to the fallout problem and becomes possible because of the refinement of instruments capable of more easily and effectively detecting radiation in the living animal.

In order to estimate the effects of these internal emitters on man, the relation of the known radium burdens and biologic effects in man will be related to known burdens of radium in dogs. The comparable biologic effects in dogs of Ra and Sr^{90} are to be established, from which will then be derived an estimate of the effects to be expected from a given burden of Sr^{90} in man. These data will also provide the basis for a more reliable maximum permissible concentration and be useful for estimating the effects to be expected from other radioisotopes. Pilot studies and small-animal experimentation have provided the basis for a sound program on larger animals, and, within limits, on man. Special attention will be given to Sr^{90} and to other radioactive isotopes which are a part of the fallout problem. The work on mice and rats will be continued since details of statistical variability and general biologic principles can be worked out on large numbers of these two species at much less cost. Chronic experiments are currently being established so as to provide the data as quickly as possible, but it will necessarily be a long-term project of several years' duration. A number of ancillary projects are needed, as for instance: Complete details on all cases of human Ra poisoning or therapy; epidemiological studies of Ra poisoning and the variations in natural backgrounds; experimental data on the behavior of traces of these elements in normal humans; extensive analyses of bones, foods, and soil for contaminant as well as natural radioactive isotopes.

The net effect of the studies is intended to provide an understanding of the equilibrium conditions that may result in man under various types of environmental contamination. From these data will also be obtained the bases for evaluating the effects of departures from these equilibria.

A unified study program of the Atomic Bomb Casualty Commission has been developed to follow the exposed and control populations of Nagasaki and Hiroshima for securing the maximum utilizable data on the chronic effects of radiation on man. The program emphasizes strict epidemiological control of recognized, relatively fixed population groups which are regularly contacted and observed. This requires a systematic surveillance and access to members of the study population and necessitates adequate medical, surgical, and autopsy services for the persons when they become ill for any reason. The key to the study is systematic collection of information on significant morbidity and mortality with the data being recorded on IBM cards for handling and analysis. The overall success of the unified study program depends on reliability of routine and sympathetic cooperation between the subjects and the staff.

Other studies at the Brookhaven National Laboratory are designed toward improving methods of defining and measuring the true radiological dosage;

studying the direct effects of radiation on viability of a series of organisms ranging from viruses to large animals; comparing the effects of enzyme systems irradiated in vitro and in vivo; comparing the biological effects of equivalent dosages of regional and localized doses of X-rays and gamma rays; studying the factors governing the nonspecific transport of water and ions in the various compartments of the body.

At both the University of Rochester and at the University of California Radiation Laboratory the occurrence of the bilobed lymphocyte has been under study with the general impression that it is a reliable index of radiation exposure, but time consuming to carry out. To this end plans are under way to develop a scanning-counting device which will substitute for human eyes. These data may have relation to development of a method for biological detection of low-level exposures to radiation; in the first laboratory the work is in cooperation with exposure to dental X-rays. Other studies at University of California Radiation Laboratory include an analysis of the effects of radiation and other factors which affect the life span of man, factors which may summate or perhaps counteract one another. In addition, attempts are under way to improve the treatment of radionuclide poisoning as a general problem, but with at least initial reference to strontium 90. The 60-inch Crocker cyclotron is to be used to study the effects of absorption of radiation of very high energies by several organic-water systems of biologic interest.

At the Atomic Energy project at the University of California at Los Angeles, a wide range of biologic systems (biochemical compounds, through viruses and enzyme systems, embryos, and adult animals) are being exposed to radiation with the ultimate aim of being able to identify specific defects.

At the University of Rochester, in addition to the bilobed lymphocyte work, it is anticipated that methods will be developed for calculating the needed white blood cell replacements and the significance of hormones and other substances as they affect the physiology of the normal and perfused spleen. The relation between tumor growth and blood cell formation will be examined and experiments will be directed toward studying the relation of anemia to the increased concentration of hemin in certain experimental mouse tumors.

(b) Biological research

Fiscal year 1957	$5,475,572
Fiscal year 1958	6,034,000
Fiscal year 1959	7,798,000

Genetics research to obtain critical information upon which more accurate estimates of the genetic effects of radiation on human populations can be based is one of the major objectives under this category. The need for additional information has been emphasized by the 1956 reports of the United States National Academy of Sciences and the British Medical Research Council, and by the 1957 report of the World Health Organization study group on the effect of radiation on human heredity. Estimates of human genetic damage are essential to the establishment of sound permissible exposures of individuals and populations which should not be exceeded.

Only a relatively small proportion of the total genetic damage of radiation is expressed in the immediate offspring of irradiated parents. The evaluation of the immediate effects, although difficult and still not possible with accuracy due to our limited knowledge of human genetics, is nevertheless considerably more simple than the evaluation of the more persistent long-term effects of radiation on human populations. Many years of study will be required to collect the data necessary for these vital evaluations. Recently, however, Oak Ridge National Laboratory's longevity studies of the first generation offspring of male mice which survived Operation Greenhouse have revealed a significant decrease in life span equal in magnitude to the decrease in the life span in the irradiated survivors themselves. This indicates that life shortening in the immediate descendents of irradiated parents may be an additional serious genetic hazard in man. In addition, this observation may provide a valuable method of comparing the gentic radiation sensitivity of different species of animals which would make the eventual extrapolation to man less uncertain.

Areas of research in which additional effort is needed and planned include:

(1) Variation in rates of spontaneous and induced mutation associated with different species, with different stages in development and under different physiological conditions. Much of this work involves laboratory plants and animals, especially mice. Studies of induced mutation in mice at lower radia-

tion doses, at different developmental stages and in somatic tissues will be expanded. A large-scale, long-term induced mutation test in another mammalian species, probably swine, will be initiated during fiscal year 1959 to supply additional information on mammalian radiation genetics. Studies of human spontaneous mutation rates will be expanded and support of human genetics studies in a number of medical schools will be undertaken to stimulate the training of medical geneticists which will greatly aid the future development of the program. Information on induced mutation in humans will be sought by surveys of the offspring of parents known to have received radiation. Cytogenetic and mutational studies of human cells in tissue culture will be encouraged to permit more direct comparisons of the response of human and other cells to radiation.

(2) The extent of genetic as opposed to environmental components in the expression of inherited traits.

(3) Frequencies of deleterious genes already carried in human populations.

(4) Rates of accumulation and elimination of deleterious genes in successive generations.

Studies of the offspring of consanguineous marriages supply data bearing on (2), (3), and (4), and, in addition, yield estimates of overall deleterious mutation rates. Such studies of consanguineous marriages in Japan as well as in other samples of the human populations will be increased.

A second broad objective of our genetic research is to obtain knowledge of the chemical and structural nature of the genetic material and the precise manner in which these are altered by radiation. Such understanding provides the only hope of eventually controlling or ameliorating the genetic effects of radiation. Increased emphasis will be placed on studies of the genetic material at the molecular level in viruses and microorganisms, on determination of mutation rates at low levels of exposure, and on the genetic effect of chronic as contrasted to acute radiation.

(c) Biophysics research

Fiscal year 1957	$542,280
Fiscal year 1958	563,000
Fiscal year 1959	627,000

A basic objective of radiation biology is to study the mechanisms by which the energy of ionizing radiations affect biological organisms. Although some progress has been made in the discovery of various chemical changes relating the ionization initially produced to the various biological effects which may result, the relationships involved are extremely complex and much further study is needed.

It appears that the initial chemical changes induced by ionization are not instantly fixed as damage and that a more complete understanding of the subsequent chain of events ultimately resulting in irreparable biological damage may enable us to find means to prevent or reduce the injury which would otherwise result. This can only be accomplished with the help of the type of work now budgeted under Biophysics.

Research in biophysics generally involves—

(1) The development or adaptation of sources of various types of radiation to travel the irradiation of an organism (or limited portion of an organism) under closely controlled conditions;

(2) The development of methods of observation and measurement of transfer of energy from radiation (particules or quanta) to the biological material (organism, cell, or portion of cell) and of subsequent chemical changes;

(3) The development of better methods and techniques for defining and determining damage to whole or fractional parts of the organisms; and

(4) The development of methods and techniques for extracting the maximum amount of useful information from available research data.

Increases in the fiscal year 1959 budget in this category will go to increased effort in methods of instrumentation and measurement of transfer of energy from radiation to biological material at the Oak Ridge National Laboratory, and, at Brookhaven National Laboratory, (*a*) to better adaption of high-energy sources of radiation to biological studies, and (*b*) to a study of the effects of radiation on large molecules.

(d) Environmental sciences

Fiscal year 1957	$134,852
Fiscal year 1958	393,000
Fiscal year 1959	488,000

An ecological approach to the problem of radiation effects on biological systems is part of the environmental sciences program. As a problem in ecology the relationships of the factors in the environment to the living organisms in a community, and of the interrelation of the living organisms in the community to each other, are being studied. Radiation is considered to be a new and added factor in the environment. For this program the objective is to single out from other environmental factors the effect of radiation on biological systems.

One part of the program is to observe the conditions that exist before radiation is a factor in the environment in order that the extent of accumulated contamination and its longtime effects can be better evaluated. To this end natural conditions as they exist in major soils, climatic and vegetational areas of the continent are to be mapped. Projects that are characteristic of this research include studies in ecology of freshwater algae, bioclimatic investigations in the Appalachian Plateau, and productivity of aquatic habitats.

Another part of the environmental sciences program on the radiation effects on biological systems is the ecological study at Rongelap Atoll. Here contamination has already occurred and it is now possible to measure the effects of radiation from fallout upon the plants and animals of this atoll. The radioactive isotopes in the fallout provide tracers for the study of the movement of minerals in the environment on a scale that would be impossible to duplicate under any practical experimental conditions. A study of Rongelap is also of special interest as the natives who were removed from Rongelap in March 1954 have now returned (June 1957) and are a part of the ecology of the atoll. Other factors that make Rongelap a desirable study area are as follows: conditions previous to contamination by fallout can be predicted; the atoll has received heavy fallout from one test, essentially thereby simplifying calculations of biological half life and rate of decline: and the effects of different levels of contamination can be observed by sampling at various islands in the atoll as the contamination on the islands varied to a considerable degree, the extremes being different by a factor of 10.

The ecological evaluation of the effects of fallout on biological systems will contribute pertinent information relative to the selection of sites for atomic-energy facilities and for waste disposal.

2. Combating radiation detrimental effects, $2,487,000

(a) Medical research

Fiscal year 1957	$899,246
Fiscal year 1958	1,231,000
Fiscal year 1959	1,460,000

A number of new developments during the past year and a half have resulted in at least one important possibility for the treatment of radiation sickness. Studies under the biology program, in particular at the Oak Ridge National Laboratory, have shown that permanent recovery from the acute effects of lethal doses of radiation can occur by replacing the destroyed bone marrow cells of the irradiated animal with cells from an unirradiated donor animal. Consequently there is considerably more emphasis on this approach to combating radiation effects than in the past.

This finding, originally observed in mice, has been confirmed and extended to rats, guinea pigs, rabbits, and monkeys. The results with monkeys have been particularly encouraging. Research was therefore initiated in fiscal year 1957 and considerably expanded in fiscal year 1958 to explore the feasibility of bone marrow transplants in man. Several sources of human marrow are being investigated, along with methods of preservation, in order to gain information useful in planning a bone marrow bank for emergency radiation accidents. A group of the country's leading hematologists are collaborating with the Commission in this endeavor. Animal work has provided the basic information; however, no experimental animal has the same type of blood immunology as man, and the work must now be carried out in human subjects. Bone marrow has been transfused in a number of patients suffering from various diseases. No toxic reactions or other contraindications to the use of either fresh or preserved marrow have been observed. If successful, the technique of bone marrow transplantation may also prove to be beneficial in diseases unrelated to radiation sickness, such as aplastic anemia and acute leukemia.

The investigation of the toxicity of chemical protective agents in humans has continued. AET, the compound most successful in protecting mice against radiation death, is apparently too toxic for human use, as has been true of all other chemical agents investigated in the past. However, a considerable num-

ber of other compounds, almost as effective as AET in mice, have been synthesized and some of these may prove to be less toxic in humans. As other new drugs with prophylactic action against acute doses of radiation are prepared, they will be investigated for possible human application.

The search for naturally occurring humoral or other types of protective agents will continue with emphasis on the basic aspects of the mechanism of action. Progress in this field requires more knowledge of the action of radiation on the molecular and structural components of living cells.

A number of new low-level counting facilities capable of measuring the radioactive content of the human body will be in operation by fiscal year 1959. These counters will be particularly useful in planning and evaluating treatment of workers who have accidentally ingested or inhaled radioisotopes. The search for improved agents to aid in the elimination of radioisotopes from the body will continue. The application of various hormones and dietary factors in altering bone metabolism will continue to receive attention as a possible means of eliminating radioisotopes already fixed in the skelton.

(*b*) *Biological research*

Fiscal year 1957	$851,237
Fiscal year 1958	770,000
Fiscal year 1959	920,000

Progress in the experimental study of temporary recovery from acute radiation effects indicates that more emphasis needs to be placed on two aspects of this problem. It is necessary to improve our knowledge of the physiology of the radiation induced changes, particularly in the immunologic responses of irradiated animals; the late or delayed effects require much more study to relate them to known physiological processes and to provide a possible means of alleviation. Methods of treatment will continue to be emphasized. Studies to provide means to reduce effects of internally ingested radioisotopes by detoxifying agents will continue.

Searches for new synthetic compounds which help to prevent effects of radiation are to be continued with the hope that the toxicity of active compounds can be reduced.

If the biological significance of linear energy transfer and relative biologic effect of photon energies and neutron flux is to be meaningful in terms of effects on humans, more emphasis on experiments involving total body irradiation of animals larger than the common laboratory species must be initiated. Data so far have indicated that large species differences exist, whether due to metabolic variations or the life span of experimental animals. The discovery of the mechanism of damage and recovery in man depends upon extrapolation of data obtained from the most comparable sources.

Studies of the radiation effects on large animals are to be expanded. Fertility, reproduction, work capacity, and resistance to disease are parameters other than death by which radiation effects may be evaluated through such studies.

Added effort should be initiated in the epizoology of ionizing radiation from fission products and mimetic diseases. For practical reasons as well as for scientific value, more must be known of the nature of the disease causing anemias, thrombocytopenias, fetal monstrosities, etc. Data on livestock bred and raised in a radioecology due to natural activities in water, soil, rocks, or altitudes should be collected in order to dovetail with human data also being sought, since the pathway of assimilation is bound to be an important part of the results.

(*c*) *Biophysics research*

Fiscal year 1957	$96,368
Fiscal year 1958	96,000
Fiscal year 1959	107,000

Much of research in biophysics described in connection with radiation effects is equally applicable to this category, combating radiation detrimental effects. In either case, biophysical research develops the tools with which the biological effects of radiation are studied. In addition to the development of tools and methods for basic research in these fields, essential biophysical activities in connection with many phases of nuclear activity are concerned with the limitation of exposure of personnel to radiations. Such activities involve the identification and evaluation of radiation hazards, the establishment of safe standards, and the development of appropriate shielding and other measures for new

facilities, experiments, and test operations. The development and use of sources of radiation of high energies and of new design such as the bevatron, new high energy synchrocyclotrons and heavy ion accelerators at University of California Radiation Laboratory and Brookhaven National Laboratory, continues to tax the resources of the biophysicist in his efforts to find optimum solutions to the problems of evaluation and protection which they present.

3. Beneficial applications of atomic energy, $10,476,000

(a) Cancer research

Fiscal year 1957	$3,199,038
Fiscal year 1958	3,480,000
Fiscal year 1959	3,707,000

A major portion of the increase will go to the Brookhaven National Laboratory, where with the completion of the medical hospital and reactor, early in fiscal year 1959, additional staffing will be required for the overall cancer and medical research program. A part of this increase is intended for the Oak Ridge Institute of Nuclear Studies where studies on internal emitters will be expanded. The remaining portion of the increase is for the Argonne Cancer Research Hospital to provide for the cost of additional patient care as result of the availability of the 70 Mev. linear accelerator for patient treatment in fiscal year 1959. This increase will also permit expanded patient studies with Sr–85 and radium.

At Brookhaven, though a limited number of brain-tumor patients have been treated with B^{10} followed by exposure to the neutron beam of the pile, progress has been made. The use of sodium pentaborate combined with a technique for intro-internal cartoid injection seems to have solved to some extent the skin reaction problem and consequently gives a more promising aspect to this form of therapy. Full-scale patient treatment with the new medical reactor is expected by mid fiscal year 1959 and by fiscal year 1960 this group is expected to stabilize its operational level.

In addition to the brain-tumor studies, exploration in the use of short-lived radioactive isotopes in the therapeusis of disease states such as hepatoma, hepatic metastases and other metastatic cancers, are continuing. Results with radioactive manganses as a palliative measure in hepatic and metastatic cancer have been encouraging with emphasis during fiscal year 1959 directed toward its therapeutic use in metastatic malignancies.

Increased effort will go into studies associated with the identification and possible use of the newly discovered "erythropoietin," a substance capable of stimulating red blood-cell production. This material may be of significant importance in the treatment of anemias associated secondarily with cancer and other diseases, as well as in the study of the mechanism of blood production, a problem associated with radiation sickness.

The specialized equipment of University of California Radiation Laboratory for accelerating particles to very high energies, as for example, 715 Mev. protons and comparable energies of neon, carbon, and nitrogen ions, will be used to provide localized irradiation to the pituitary and hypothalamic areas of the brain of dogs in preparation for the possibility of their use therapeutically. The wide variety of these particles and their properties provide a unique opportunity to make comparative studies of biologic effectiveness and to study the effects of localized lesions of the brains in animals which have not also been traumatized by the otherwise coincident surgery.

Immunological studies are progressing satisfactorily, though considerable fundamental work remains to be accomplished. The program at the University of Rochester continues to be active in work with animal tumors, which it is hoped will lead to experimental radiation therapy using antibody-carried radioactive isotopes. From the knowledge gained it is hoped that these studies can be continued with human tumors to a point where localization studies of antibodies in human tumors will prove effective.

Iodine 131 labeled "lymphosarcoma" antibodies in a solid tumor will continue to receive attention at the Argonne Cancer Research Hospital. Both antibody localization and cytotoxic effects of such antiserum will be emphasized during the coming year. It is expected that in the near future these studies can be extended to human patients suffering from various neoplastic diseases.

Research to obtain fundamental information on both the immunologic and metabolic factors involved in neoplastic growth will also continue for the purpose

of studying means whereby carcinogenesis can be controlled. In addition, sulfur-containing biochemicals will be studied at the cellular level in relation to their effect on neoplastic growth. Additional immunological studies related to human tumors have been carried out using a doubly labeled compound to study the localization of antitumor antibodies. This work reveals significant progress in this most difficult area, and it is hoped that accomplishments during the coming year will contribute to the clarification of the antibody localization problem.

(b) Medical research

Fiscal year 1957	$2,425,421
Fiscal year 1958	2,725,000
Fiscal year 1959	2,713,000

The level of activity in exploring the uses of radiation and radioisotopes as a tool in the study of diseased states will not increase in fiscal year 1959.

One of the more promising leads in this area includes studies on the unique properties of the proton, deuteron, and helium-ion beams (of the 184-inch cyclotron) which permit localized large doses to the pituitary gland without undue injury to the surrounding tissue.

Long-term studies in humans will continue on the effects of internal irradiation from P–32, yttrium–90, strontium–90, and iodine–131 when used therapeutically in certain diseases with concomitant studies to evaluate the hematological response and possible metabolic changes resulting from internal irradiation.

It is expected that the availability of the new medical reactor at Brookhaven National Laboratory will open the way to studies associated with activation analysis. This will make possible expanded studies on the role of trace elements, particularly in normal and abnormal metabolism.

Studies in this area continue, utilizing various radioisotopes with respect to their diagnostic implications and diseases of cardiovascular, renal, neurosurgical, muscular, skeletal, gastro-intestinal, and endocrine systems. It is anticipated that certain functional studies will be undertaken in the patient who, as a result of extensive therapy, develops symptoms of radiation sickness. In addition, the effects of radiation on the skin in neutron capture therapy patients will be undertaken.

(c) Biological research

Fiscal year 1957	$2,779,992
Fiscal year 1958	3,046,000
Fiscal year 1959	3,154,000

The program in this area is designed to exploit to the fullest extent, within available funds, the beneficial uses of atomic energy in the fields of the biology and agricultural sciences for the betterment of mankind. It has already been firmly established that radioisotopes are a powerful and most useful tool in the laboratory for elucidating life processes. A fuller understanding of the movement of ions in soils, uptake by plants and utilization by animals may well be a major factor leading to increased food production and thereby the reduction of world tensions in the struggle for food and shelter. Information obtained on basic biological processes is likely to contribute to an understanding of the mechanism of radiation injury.

The biological effort in this field will include:

1. Methods of controlling plant and animal diseases, the development of more effective insecticides and pesticides through the use of radioisotopes.

2. The role of micronutrients in plants and animals as revealed by the use of radioisotopes. Some of these trace elements are known to be essential for the function of several enzymes. By the use of radioisotopes, it is expected that the role of these elements in growth processes will be elucidated.

3. The mechanism of synthesis of food constituents such as proteins, carbohydrates, fats, and vitamins and factors affecting their production will most certainly be advanced by the use of radioisotopes.

4. Knowledge of the precise growth processes, factors affecting growth and reproduction will be investigated using radioisotopes.

5. The mechanism of action of enzymes responsible for biochemical transformation can be most effectively followed using labeled organic compounds.

(d) Environmental sciences

Fiscal year 1957	$298,421
Fiscal year 1958	400,000
Fiscal year 1959	402,000

In aquatic biology radioisotopes are being used to help solve some of the fundamental problems of productivity in lakes and in oceans. One example is the use of carbon–14 to measure productivity of the 1 celled plants, the organism upon which all production is dependent. From the estimate of the basic productivity, total production is estimated and areas of good fishing are predicted, information which is of great importance in fisheries management. Another example is the use of radioisotopes to determine the nutrients that are essential to lake productivity. A third example is the use of radioisotopes to determine the fate of trace elements in the mineral metabolism of aquatic organisms.

Ecological research related to the beneficial applications of atomic energy will include the following:

1. Productivity studies in the Pacific and Atlantic Oceans and in mountain and lowland lakes. The use of radioisotopes is a superior and relatively new technique for estimating production and is currently of worldwide interest. Reliable estimates of the productivity of lakes and of parts of the ocean can be expected.

2. Radioisotope exchange studies in lakes.

These studies are directed toward the determination of the elements that are essential to production, especially to the production of a desirable species of fish. Lake fertilization in some instances has resulted in the production of an undesirable species. Also, these studies will provide information on how the inorganic nutrients that are present but not available may become available for production of organic matter.

3. Biological and chemical studies of marine organisms including fish, shellfish, and plankton. Basic information on the role of various elements in the life processes is essential to the understanding of the physiological demand of an organism for specific isotopes. The chemical studies will add valuable information to the limited data on the chemical composition of marine organisms.

(e) Distribution of radioisotopes under research support program

Fiscal year 1957	$228,790
Fiscal year 1958	260,000
Fiscal year 1959	500,000

This category provides for furnishing radioisotopes for research in medicine, biology, and agriculture at a reduction of 80 percent in production costs. The program has been well received, and has served to encourage the use of radioisotopes in beneficial research and it is expected that there will be a considerable increase in the use of radioisotopes in fiscal year 1959. The following table indicates the extent to which researchers have benefited based on fiscal year 1957 experience:

Area of science:	*Number of projects*
Medical research	726
Cancer research	73
Biological research	367
Agricultural research	17
Total	1,183

4. Biomedical problems in atomic-energy operations, $9,858,000

(a) Medical research

Fiscal year 1957	$1,350,726
Fiscal year 1958	1,491,000
Fiscal year 1959	1,603,000

A variety of potentially toxic materials are currently under investigation; these include such problem chemicals as beryllium, fluoride, uranium, thorium, and mercury, as well as more esoteric materials such as indium, zirconium, thallium, niobium, europium, the terphenyls, etc. Each of these materials is used in some process essential to the overall program. In many instances a material may be studied for its potential hazard because little or nothing is known of it toxicologically, whereas in other instances the establishment of permissible industrial limits for a recognized hazard requires research. In addition, a number of toxicological problems relating to a specific situation in industrial or

weapons programs will require short-term intensive investigations to secure an answer for continuing the operation most effectively or safely.

Examples of such research programs are: A comparative study of the straight toxicology of 10 rare earth compounds as to dosage and symptomatology in relation to the separation and metallurgy of these elements at certain laboratories. The effects on the lung and the body from deposition of both nonradioactive and radioactive particulates in the lung, together with study of the possible role of these in inducing lung cancer. The toxicology of the terphenyls, a group of organic chemicals used for the organic moderated reactor, with special reference to carcinogenicity of the irradiated and nonirradiated forms. The effects on the lung and body of inhaled radon and uranium ore dusts as encountered in mining and milling operations compared with the effects of pure radon and uranium. Beryllium and mercury are constant toxicological hazards. Studies of the deposition and distribution parameters of any element but with special reference to elements having relation to industrial processes or to fission products. Development of processes and/or chemicals by which the body may be freed of contaminants, and objects and areas to be decontaminated.

(b) Biological research

Fiscal year 1957	$1,800,663
Fiscal year 1958	2,144,000
Fiscal year 1959	2,348,000

The major objective under this program is to understand the behavior in biological systems of fission products from nuclear tests and effluents from reactors in the agricultural cycle under both field and laboratory conditions. The pathways by which these products get into any phase of the food chain and eventually are ingested by humans should be fully investigated. Information is needed on various factors affecting the biological uptake, such as temperature, moisture, interrelationships with other nutrients, etc. The possibility of reducing the hazard by the use of chemicals such as chelating agents is being investigated.

Research will be conducted on physical or chemical treatments of soils for the reduction of the availability of fission products to plants. Increased attention will be given to the relative accumulation of fission products in various species, varieties and parts of food plants. The surface redistribution of fission products after they are deposited on agricultural land, which would create areas of relatively high and low soil accumulations, will be investigated.

(c) Biophysics research

Fiscal year 1957	$1,888,618
Fiscal year 1958	1,985,000
Fiscal year 1959	2,009,000

A large fraction of the work in this category is devoted to studies of the physical, chemical, and biochemical behavior of radioactive materials and toxic chemicals released to the environment in air, water, and soil. In general, such studies are carried on in connection with the operation of Atomic Energy Commission installations, providing not only guidance for current and future operation of such installations but also experience which may be applied, with certain limitations, to plans for new installations of various kinds. Included are studies of the relationships between dissemination of radioactive materials in the environment and such environmental factors as soil chemistry, geological structure, topography, hydrology, meteorology, and composition of plant and animal life. These studies become of increased importance with the accelerated exploitation of nuclear energy and with growing public concern for possible hazards of exposure to radioactive materials.

At the Oak Ridge National Laboratory data are being obtained to develop safe, but realistic, limits of permissible exposure and to improve the dosimetry related to problems of internal exposure. The great expansion in peaceful uses of atomic energy may suffer if unreasonable and excessive radiation protection measures are placed in the way of this development. This includes the determination of concentration and distribution of major, minor, and trace elements in standard man, the development of urinalysis procedures for evaluating excretion in terms of internal distribution, the revision of MPC values in the handbooks, and pilot experiments with research animals on the biological parameters involved in calculating MPC values for which the available data are inadequate or non-

existent. Wherever and whenever possible, human data will be obtained. These studies represent one of the principal sources for maximum permissible concentrations recommended in handbooks of the National Committee on Radiation Protection and Measurement and of the International Commission on Radiological Protection.

The health and safety laboratory of the Atomic Energy Commission, New York is engaged in a program of research in the specialized fields of standard test aerosols, mercury vapor detection, rock mine ventilation and disposal of contaminated wastes. The laboratory provides biophysics and industrial hygiene consultation and services upon request to all Divisions and Offices of the Atomic Energy Commission.

(d) Environmental science

Fiscal year 1957	$1,298,810
Fiscal year 1958	2,093,000
Fiscal year 1959	3,898,000

The biomedical problems in atomic energy included in the environmental sciences program are related to contamination in the environment from either weapons tests, waste disposal, or reactor operations. One reason for concern about radioactive isotopes in the environment is that these isotopes may find their way to man by way of the food chain and potentially become a health hazard.

The program for research in this category will include the continued monitoring of contaminated areas to determine quantitatively and qualitatively the extent of the contamination and its effect on the biomass. A slightly expanded ecological program at several Commission installations will allow increased observations on the effects of radioisotopes upon field plants and animals.

Disposal in the ocean of radioactive waste becomes the concern of all nations because the waste becomes a possible source of contamination of the entire ocean. Therefore, research on circulation in deep ocean waters will be continued with the objective of determining the feasibility of using deep ocean waters as a site for waste disposal.

Monitoring of contaminated areas will include the determination of radioactivity on the land, in the air, and in the sea, on a worldwide basis where possible.

Meteorological research is concerned with problems arising as a result of nuclear weapons testing, reactor operation, fuel fabrication and reprocessing, and high level radiochemical research. Micrometeorological studies at the National Laboratories aim to correlate wind, vertical temperature structure, and turbulence in the layer near the ground with observed concentrations of plant effluents or test aerosols downwind of known sources, to develop improved methods of predicting on-site and off-site concentration or dose levels for site selection, waste disposal evaluation, reactor hazard evaluation, and to provide suitable records for interpretation of anomalous air-monitoring data. Studies of large scale wind currents in the troposphere and stratosphere of exchange of air between stratosphere and troposphere and of scavenging action of rain and snow are necessary in order to predict or reconstruct local fallout, long-range trajectories, and ultimate worldwide distribution and deposition of weapons test debris. Hypotheses regarding the rate of vertical mixing and horizontal circulation in the stratosphere taking into account data on stratospheric ozone and water vapor will be further developed and tested in order to obtain the maximum amount of useful information on worldwide distribution from a small number of costly stratospheric sample analyses. Sampling methods in use will be evaluated and development of more efficient and cheaper methods will be pursued. Estimates of age of debris by relative activity of various short and long-lived fission product radioisotopes found in stratospheric and tropospheric samples and in rain are used to determine the origin and route of arrival of fallout. From such information it is hoped to develop satisfactory methods of predicting future fallout from weapons tests already conducted or from assumed future rates of testing. The effects of ionization produced by radioactivity in the atmosphere or on the ground are also the subject of study because they are not well understood and may be significant in terms of cloud electrification, radio communication, or weather.

5. Dosimetry and instrumentation, $2,375,000

	Fiscal year 1957	Fiscal year 1958	Fiscal year 1959
(*a*) Dosimetry	$456,644	$473,000	$510,000
(*b*) Instrumentation	1,385,911	1,520,000	1,865,000

The effects of nuclear radiations on living matter are of basic importance to the Commission's biomedical research program. The correlation of these effects with the amount of ionizing radiation producing them, forms the quantitative basis of these researches. Determination of the character of the radiation (alpha, beta, gamma, or neutron) and its energy, and identification of the radionuclide source is essential. Instruments for measuring these effects, as well as the special techniques required for their proper use, are accordingly prerequisites to biomedical research, radiation protection, and control of radiation hazards. The development of improved or new instruments and measuring techniques similarly supports new or more productive research. These activities comprise this budget category.

During fiscal year 1959 development efforts will be continued or initiated for new techniques in external and internal radiation monitoring for dose distribution measurements in large and small animals; improved radiation survey meters of increased reliability, utilizing transistor techniques; telemetry of radiological and meteorological measurements; and monitoring equipment for high-energy radiation from accelerators. Newly developed plastics which simulate the response of tissue to ionizing radiations will be applied to special dosimetry problems. Of particular importance is the development of photomultiplier tubes with low radiation backgrounds for use in whole body counters and for low-level analyses of the radionuclide content of biological specimens.

Increased research on the biological effects of radioactive fallout requires supporting instrumentation and dosimetry. Four areas of research and development may be defined for this purpose:

(1) The development of new methods for detecting ionizing radiations will be undertaken. The most promising includes solid state devices such as diode junctions, cadmium sulfide, and germanium crystals.

(2) Electronic and electromechanical systems will be developed for the processing of the electric signals from the detector elements. This automatic equipment will provide greater speed, versatility, accuracy, and reliability of data handling in the research program. Specifically, development of an automatic scanning gamma-ray spectrometer will be initiated and whole body counter development will continue.

(3) Improvements in low-level counting equipment are anticipated from the continued research in scintillating materials and special low-noise photomultiplier tubes, in order to permit the accurate measurement of smaller and smaller trace quantities of radioisotopes in biological samples.

(4) The design of radiation detectors with unique form factors for special in vivo measurements will be emphasized. Successful completion of a brain probe has indicated the feasibility of extending these developments for other portions of the anatomy.

6. Civil effects test program

Fiscal year 1957	$497,202
Fiscal year 1958	665,000
Fiscal year 1959	900,000

Limited biomedical effects studies have been conducted at several of the weapons test series, with the first extensive program being included in the Pacific Operation Greenhouse series of 1951. Continual small-scale participation in continental test series since 1953 has resulted in the development of new and improved instrumentation and techniques for field studies which now make it possible to perform field tests with a degree of precision previously available only for laboratory studies. Thus, it is now feasible to plan field studies which can utilize the unique characteristics of nuclear explosions such as extremely fast time of delivery of massive gamma and neutron dose to large areas so necessary for acute radiation studies of large animals as related to special weapons defense measures. The frequency of weapons test series provides for

the timely planning of effects studies in keeping with the normal pattern followed by scientific investigators. This includes an initial planning and buildup period, a comprehensive period for collection of data in the field, and, finally, a period of data evaluation and reports preparation. It is expected that during fiscal year 1958 and 1959 this program will enter the planning and early buildup stage.

Basically, there will be six general areas of study; these are:

(*a*) Fallout studies.

(*b*) Biomedical and physical aspects of prompt gamma and neutron radiation.

(*c*) Blast effects on structures.

(*d*) Biomedical effects of blast.

(*e*) Radiological countermeasures, decontamination, and instrumentation.

(*f*) Supporting services.

It is expected that the fallout studies will include continuation of work carried on since 1946 by University of California at Los Angeles—atomic-energy project on fallout deposition, biological availability of fallout materials, physical and chemical characteristics of fallout, and biological significance of fallout.

The prompt gamma and neutron radiation studies will include continuation of the program designed to obtain data to be correlated with the medical records of Atomic Bomb Casualty Commission and to extend the development of reliable shielding factors for shelter design and other radiological defense uses. Studies will be conducted on interspecies relationships in the response to acute radiation exposures.

Relative to blast effects on structures, it is not proposed that there will be any large program sponsored by AEC. However, whenever possible, measurements will be made on response of either new or existing structures. Extensive studies are proposed for determining and proof-testing radiological countermeasures and decontamination procedures. Experiments will result from evaluation of Operation Plumbbob experience which will provide information for planning countermeasure and decontamination operations. Instrumentation and supporting services will include, as necessary, development of special instrumentation for supporting other parts of the program.

7. Equipment not included in construction projects, $1,831,000

Equipment requirements for the biology and medicine program are estimated at $1,831,000 for fiscal year 1959 which represents an increase of $324,000 over fiscal year 1958. The increase is primarily for the expanded biomedical research program. A major portion of the amount requested is for laboratory and shop equipment to be used at universities, laboratories, and institutions in connection with our offsite research program. Also, a substantial amount of new equipment will be required in connection with the relocation of the New York Operations Office Health and Safety Laboratory within the city.

There follows a breakdown of the total equipment costs indicating amounts estimated for each major installation in relationship to its other operating costs under this program.

[In thousands]

Installation	Other operating costs	Equipment costs
Argonne Cancer Research Hospital	$1,800	$60
Argonne National Laboratory	3,252	166
Brookhaven National Laboratory	3,885	250
University of California Radiation Laboratory, Berkeley, Calif	2,020	55
Oak Ridge National Laboratory	4,327	200
University of Rochester	1,550	50
Atomic Bomb Casualty Commission, Japan	1,925	50
Hanford Plant, General Electric Co	1,850	80
Health and Safety Laboratory, New York	847	206
Oak Ridge Institute of Nuclear Studies	736	148
All other	18,977	566
Total	41,169	1,831

INCREASE IN PROGRAM

Mr. RABAUT. The appropriation for 1958 was $36 million. The request for 1959 is $43 million. The increase is $7 million. Your two

principal increases in this program are for radiation effects on biological systems and biomedical problems in atomic energy operations. Why are these necessary?

RADIATION EFFECT ON BIOLOGICAL SYSTEMS

Dr. DUNHAM. I will take the first one first.

One of the largest reasons for an increased cost in this program is to get long-term studies underway. I believe I testified last year to the need for getting information on animals that live longer than a few weeks, like a fruitfly or a few years like a mouse or a rat. We have undertaken studies in the past in dogs which have an average life span of perhaps 12 years. These studies have been concerned primarily with the effects on sterility of the male dogs and concern with the effects of radium, plutonium, thorium, and more recently, radio strontium, one of the principal hazards from fallout from nuclear weapons.

These are expensive programs. They require a certain amount of construction of facilities, and you will note that in our authorization section for biology and medicine we have such items in there to keep these things going. So I would say that largely this money will go for long-term effects of internal emitters in longer lived animals. This would be not just strontium 90. It would include other fission products we would be concerned with, some from weapons testing, some concerned with the relation to hazard from reactor accidents such as occurred in England. This is a long-term proposition. It is not tied necessarily to weapons testing.

There is in this also a project which we plan to start, a genetics project. It will be the first one in a mammalian species other than the mouse. This will be in swine. It will involve about a thousand swine, and it will be a 7- to 12-year project. This again will give us two things. One, information on a different species of animal which gives us more confidence when it comes to interpreting what it means for the human. The other, information on an animal that has a longer life span. So that one can determine whether or not the genetics effects produced by a single dose of radiation persist throughout the fertile period of the animal or whether or not they are transient.

BIOMEDICAL PROBLEMS IN ATOMIC ENERGY OPERATIONS

Now, as to the biomedical problems in atomic energy operations, the largest item of expense here involves fallout studies, fallout measurement, and one of the larger items is again an increase in cost of monitoring the stratesphere as well as worldwide soil sampling, worldwide food sampling, and worldwide human bone and worldwide milk sampling program.

Mr. RABAUT. Is that all included in this item?

Dr. DUNHAM. That latter was for the item No. 4, "Biomedical problems."

Mr. RABAUT. Why is it that we need more than the $36 million we had last year? What are you going to do that you did not do before? You are going to have the swine program.

Dr. DUNHAM. That is right.

Mr. RABAUT. That is $7 million. Now, that is a lot of money.

Dr. DUNHAM. We are going to double the program at the University of California on the strontium work. That is just beginning to get underway. We are going to increase the dog work at Argonne

National Laboratory, and some long-term studies with radio cesium at Los Alamos.

OFFSITE RESEARCH CONTRACTS

Mr. RABAUT. How many offsite research contracts which were due for renewal this last year did you refuse to renew?

Dr. DUNHAM. Sixty-six, I believe, sir.

Mr. RABAUT. That you refused to renew?

Dr. DUNHAM. Well, we terminated. They were not all refusals to renew. Some of them were self-terminating. Some of them were not renewed because they were not as productive as we had hoped them to be.

Mr. RABAUT. Please give us for the record the same type of tabulation requested for offsite contracts in the physical research program, show the number of contracts that are 10, 5, or 3 years old, with the same recipients.

Dr. DUNHAM. Right.

(The information referred to follows:)

DIVISION OF BIOLOGY AND MEDICINE

Schedule of fiscal year 1958 offsite research contract renewals

Number of years of support	Number of contracts	Fiscal year 1958 renewal amount
Less than 3	64	$1,743,652
3 to 5	129	2,326,517
5 to 10	177	4,245,320
10 or more	4	327,674
Total	374	8,643,163

Mr. RABAUT. How frequently are research results or progress reported to you on these contracts and how frequently is work inspected?

Dr. DUNHAM. The progress report is required annually, 3 months before the renewal of the contract. My answer to the other is very similar to that given by Dr. Williams. The larger contracts, the ones that are more complicated, are visited at least once a year. Our ideal would be to visit every one once a year, but we do not have the staff to do this so these small contracts are usually visited not more than once every 2 years. By small contracts, I mean $5,000 to $6,000. That does not mean that they do not produce sometimes as important results as the larger ones.

Mr. RABAUT. Do you feel that there is a proper inspection and evaluation of the work that is being done under the present system?

Dr. DUNHAM. I think we do a pretty good job. The proposals are sent to us after usually being screened by their fellows at the university. They are reviewed by specialists on my own staff. They are again reviewed by the representatives of each of my branches. Whether they are specialists in that field or not, they all have a chance to comment and criticize. A very large proportion of these proposals are also sent out to distinguished scientists around the country for comment, particularly if there is any doubt in our own minds as to whether or not they should be supported.

Mr. RABAUT. You are talking about procedure for the awarding of new contracts.

Dr. DUNHAM. Yes.

Mr. RABAUT. I was asking about the——

Dr. DUNHAM. The renewals?

Mr. RABAUT. You feel that the evaluation of this information received is sufficient under the program that you have at the present time?

Dr. DUNHAM. I am sorry, I misunderstood you. The evaluation of the results of the research occurs in two ways. One by the scientists around the country. Whether or not they accept the research is indicated by the fact of whether or not the research is accepted in a responsible scientific journal for publication, It is also evaluated by our own staff in terms of whether or not it meets the needs of our particular program.

Mr. RABAUT. What were the items you said constitute the necessity for the increase besides the swine program?

Dr. DUNHAM. There is a very extensive program on what we call internal emitters, that is, strontium 90, cesium, fission products of one sort or another as toxic materials.

Another principal item is increasing some of the activities on these studies on leukemia at the Atomic Bomb Casualty Commission in Japan, which is probably the biggest and most useful study of the effects of radiation on man undertaken anywhere.

CANCER RESEARCH

Mr. FENTON. Is there anything new in research on radioisotopes that differentiates between cancerous tissue and normal tissue faster than in the past?

Dr. DUNHAM. Recently I was up at the University of Rochester at our project there, and they are, with the use of isotopes in tissue preparations, finding a bona fide biochemical difference between cancer of the liver cells and normal liver cells.

Mr. FENTON. How do you get at that?

Dr. DUNHAM. This particular preparation is quite an elaborate one in which they perfuse either a tumor of the liver or a normal liver of a rat—these are experimental rat tumors—with blood which contains in it certain labeled amino acids. There is a rather marked difference as to how the two types of tissues handle that normally occurring amino acid.

DOSIMETRY AND INSTRUMENTATION

Mr. FENTON. Have they made much advancement in dosimetry?

Dr. DUNHAM. Yes. We have under our program, particularly in the field of neutron dosimetry, work undertaken at the field test this last year, at Operation Plumbbob, developed a dosimeter, which will give a very clear picture of the spectrum of neutrons. This has been one of the most difficult problems the biologists have had to contend with, the uncertainties as to the neutron dose, because the neutrons tend to be very different in their energies, and tend to lost energy fairly rapidly with distance. This program was undertaken primarily to give us better information on the exposure of the Japanese at Hiroshima and Nagasaki, but it is proving invaluable in other studies.

Mr. FENTON. That is all, Mr. Chairman.

Mr. RABAUT. The committee is adjourned until 10 tomorrow morning.

WEDNESDAY, JULY 2, 1958.

TRAINING, EDUCATION, AND INFORMATION PROGRAM

Mr. RABAUT. The committee will come to order.

This morning we shall take up the training, education, and information program. We shall insert pages 150 through 164 in the record.

(The pages referred to follow:)

TRAINING, EDUCATION, AND INFORMATION PROGRAM—OPERATING COSTS

Program statement

Estimate fiscal year 1959	$21,225,000
Estimate fiscal year 1958	16,850,000
Increase	4,375,000

The training, education, and information program is directed toward broadening the base of nuclear knowledge and technology both at home and abroad. Alternative approaches including assistance to colleges and universities, operation of schools of nuclear science and engineering, offering, of fellowships, presentation of international conferences, studies and exhibits, and the development and dissemination of technical information are being pursued to achieve the objectives of this program.

The rapid technological advances being made in all phases of the nuclear energy field vividly highlight the disparity between advances in the state of the nuclear art and the capability of our educational system to matriculate sufficient numbers of qualified scientific people. Recognizing its responsibilities in this connection, the Commission is operating the International School of Nuclear Science and Engineering at Argonne, the Oak Ridge School of Reactor Technology, the Oak Ridge Institute of Nuclear Studies, and the newly initiated Nuclear Training Center in Puerto Rico. In addition, an extensive program has been implemented in the form of financial grants for the purchase of training equipment; and the provision of materials and teaching aids to colleges and universities for use in their classrooms and laboratories. Finally, a comprehensive program offering graduate fellowships in nuclear science and engineering, radiological physicis, industrial hygiene, and industrial medicine is being pursued to assure the channeling of a reasonable number of top quality students into the nuclear field.

Bilateral and unilateral agreements between the Commission and foreign nations or groups of nations are designed to promote the development of peaceful uses of atomic energy in those countries cooperating with the United States. A logical first step in implementing these agreements involves sending study groups to requesting foreign nations to determine the relative status of their atomic-energy programs, including their probable future lines of development and their existing or potential needs for technical assistance from the United States. The findings of the study group serve as a valuable frame of reference for future collaboration in atomic energy between the United States and the country involved. In addition, programs involving support of nuclear topical conferences of interest to the scientific community and the presentation of overseas nuclear-energy exhibits are being pursued.

The Commission, in carrying out its responsibilities for the dissemination of scientific and technical information, provides services including the operation of a museum, exhibits and school demonstration units, and the provision of technical services within the AEC, for AEC contractors, and for American firms and foreign countries developing peaceful applications of atomic energy. Every effort is being made to publish and disseminate AEC-developed information at a rate corresponding to the increasing demands for knowledge in this new and expanding field.

While the contribution which nuclear radiation and radioisotopes are making to the national economy has already been demonstrated, the benefits derived to date represent a small fraction of their full potential. Accordingly, in order to accelerate the rate of progress in this field, an isotope development program having as its principal concern the development of industrial and agricultural uses of radioisotopes and nuclear radiation, is being implemented.

Summary of estimates by category

	Actual, fiscal year 1957	Estimate, fiscal year 1958	Estimate, fiscal year 1959
1. Operation of schools	$1,353,096	$1,882,000	$1,910,000
2. Fellowships	344,394	686,000	954,000
3. Assistance to schools	3,639,143	7,687,000	4,855,000
4. International conferences, exhibits, studies, and other assistance	108,403	2,230,000	4,975,000
5. Museums and exhibits	513,567	604,000	630,000
6. Publications and libraries	1,578,596	2,521,000	2,137,000
7. Industrial isotope development	0	350,000	5,000,000
8. Other training, education, and information activities	144,060	437,000	331,000
9. Equipment not included in construction projects	134,686	453,000	433,000
Total training, education, and information program	7,815,945	16,850,000	21,225,000

JUSTIFICATION OF CATEGORIES

1. Operation of schools, $1,910,000

In order to make the unique facilities of the Government available for education and training in atomic energy, the Commission operates schools of nuclear science and engineering at the Oak Ridge and Argonne National Laboratories. With the establishment of courses in nuclear science and engineering at various universities, aided by the Commission through equipment grants, certain of the Commission school operations are now planned for phasing-out or reduction. Upon the graduation of the present class at the Oak Ridge School of Reactor Technology at the end of August 1958, no further classes will be scheduled for that school. In order to provide the maximum student capacity at the Argonne International School of Nuclear Science and Engineering, the 10-month course has been divided into 2 semesters with the student spending the first 5-month semester at either Pennsylvania State University or North Carolina State College, both of which conduct courses under contract with the Commission, then the student spends the second semester of 5 months at school at the Argonne National Laboratory. This has permitted the Argonne school to provide 2 courses per year of 60 students each year, a total output of 120. It is expected that at the end of fiscal year 1959 the university contracts will not be renewed since the basic instruction provided at these institutions, which is a prerequisite for entrance into the International School of Nuclear Science and Engineering, should be available in many foreign and American universities by that time. Since the prerequisite training will be available at these universities in fiscal year 1960 and thereafter, the ISNS and E will continue to admit approximately 120 qualified students each year.

The Commission also operates, through contract with the University of Puerto Rico, a nuclear training center adjacent to the university for students from Latin American countries, utilizing facilities being constructed by the United States. In addition, at Oak Ridge, the Oak Ridge Institute of Nuclear Studies offers specialized training courses in atomic energy, one example being the training of research workers in the use of radioactive materials. The Health and Safety Laboratory of the Commission's New York office also offers courses in monitoring techniques. The cost-estimates for the individual schools are detailed below:

International School of Nuclear Science and Engineering, Argonne.—The ISNSE at Argonne National Laboratory, as pointed out above, offers 2 courses a year of 5-month duration to train American and foreign students in many facets of reactor technology. The costs and student load for these courses,

together with the prerequisite courses at Pennsylvania State University and North Carolina State College, are as follows:

	Actual, fiscal year 1957	Estimate, fiscal year 1958	Estimate, fiscal year 1959
Pennsylvania State University:			
Annual student output (2 courses with 30 students each)	61	60	60
Operating costs	$109,508	$86,000	$85,000
North Carolina State College:			
Annual student output (2 courses with 30 students each)	61	60	60
Operating costs	$96,284	$80,000	$80,000
Argonne National Laboratory:			
Annual student output (2 courses with 60 students each)	126	120	120
Operating costs	$458,574	$530,000	$513,000

In addition, the ISNSE at ANL will offer in fiscal year 1959, two 6-month courses, each supporting 10 students twice a year as follows:

Reactor hazards evaluation $75,000

A course designed to provide information on the nature of reactor hazards and on the importance of control through operational care in addition to design features.

Reactor supervisor $100,000

A course designed to meet a need of many foreign countries for reactor supervisor personnel in order to operate properly the types of reactors which will be completed in the next few years.

In summary, total costs for operation of the Argonne International School of Nuclear Science and Engineering are: 1957, $664,366; 1958, $696,000; and 1959, $853,000.

Oak Ridge School of Reactor Technology.—This school, established as an interim measure to fill AEC and industry training needs at a time when universities had few offerings in the nuclear field, has now fulfilled its primary function. Due to the impetus provided by AEC programs for assisting universities in the nuclear field, the demand for ORSORT training has decreased to the point that ORSORT will be closed when the class presently in residence graduates in August 1958. Thus, the $100,000 estimated for 1959 will provide 2-month operating costs, plus closing costs associated with the termination of this program.

The costs and student load for ORSORT are:

	Fiscal year 1957	Fiscal year 1958	Fiscal year 1959
Annual student output	120	194	60
Operating costs	$325,006	$495,000	$100,000

Oak Ridge Institute of Nuclear Studies.—The principal training activity at ORINS is the special radioisotope training program. The primary purpose of this program is the training of research workers in the use and handling of radioactive materials. Training consists of courses in instrumentation, radiation detection, and safety and protection. As a corollary course special and advanced training are offered to stimulate interest and increase information among scientists and technologists in the field of nuclear energy. Two special courses in radiological health for civilian and military personnel were initiated in fiscal year 1957 as well as an advanced course in industrial isotope radiography with lecturers and participants from United States, England, and Canada. These and the regular courses are being conducted in fiscal year 1958, and are expected to continue in fiscal year 1959.

The costs and participants in this program are as follows:

	Actual, fiscal year 1957	Estimate, fiscal year 1958	Estimate, fiscal year 1959
Program costs	$140,111	$152,000	$154,000
Participants	404	357	408
Foreign	79	60	86
Domestic	325	297	322
Courses offered	11	11	10

The other major training activity at ORINS is the traveling science teachers' program wherein specially selected teachers employed in high schools of the country, receive 3 months of intensive training at ORINS. During the subsequent school year they visit high schools throughout the States, and then return to their regular teaching posts at the end of their year's appointment. Training includes special lectures in science and mathematics, instruction in teaching and laboratory demonstration techniques, and the development of low-cost demonstration apparatus. In the field, after the training period, they spend a week at each scheduled high school lecturing (with demonstrations) and conferring with students, teachers, and administrators. This has become an increasingly effective program in extending special knowledge, stimulating interest in science, science careers, and teaching, and has extended beyond the high-school level to adult groups, i. e., civic clubs, etc. The salaries of the teachers, transportation costs, and direct costs are supported by the National Science Foundation. Demstration material and administrative costs are borne by AEC. Ford Motor Co. furnishes the vehicles and Gulf Oil Co. the gas and oil for 1956–57 and for 1957–58. Seven teachers were enrolled for the year 1956–57 visiting 184 schools in all the States. Ten teachers were enrolled during the summer of 1957, and 300 schools are scheduled for the current school year. It is expected that State participation will increase the program to 25 teachers and approximately 750 schools for fiscal year 1959. Costs to AEC in 1957 were $32,000; 1958, $46,000; and 1959, $66,000.

ORINS also engages in miscellaneous training activities dealing with graduate students, special lecturers, and student educational tours. In summary, operating costs for the Oak Ridge Institute of Nuclear Studies are as follows: 1957, $363,725; 1958, $450,000; and 1959, $430,000.

Puerto Rican Training Center.—The estimate of $500,000 for the Puerto Rican Training Center provides for the following educational courses and activities:

(*a*) Training program in nuclear science and technology (24 students)	$145,000
(*b*) Reactor development and research including radiological survey (not training course but will use some students on part-time basis)	50,000
(*c*) Radiological physics and radioisotopes technique course (6 courses, 24 students each)	95,000
(*d*) Training and research in the application of nuclear energy in cancer (3 students)	30,000
(*e*) Training in use of radioisotopes in the basic medical and clinical sciences (10 students)	40,000
(*f*) Special research projects in nuclear fields	22,000
(*g*) Admnistration:	
Directors' office, salaries, and expenses	35,000
Administrative services (fiscal, supply, health, clerical, custodial, etc.)	28,000
Consultants	10,000
Travel	20,000
Contingencies and planning for future development	35,000

The $500,000 planned for fiscal year 1959 compares with $241,000 estimated for fiscal year 1958.

Health and Safety Laboratory.—Starting in fiscal year 1959 the AEC, through the New York Health and Safety Laboratory, will offer up to four courses per year in radiochemical and counting procedures. The courses will be open to foreign nationals and will be of 6 weeks' duration. The courses will consist of lectures and laboratory assignments on the following subjects:

1. General problems of distribution of fission products in the atmosphere.
2. Counting equipment and techniques.
3. Determination of activity and identification of specific radioisotopes.
4. Development of analytical methods.
5. Philosophy and interpretation of measurements.

These courses are estimated to cost $27,000 in fiscal year 1959.

2. Fellowships, $954,000

The principal purpose of offering fellowships in nuclear science and engineering and the life sciences is to assure that a reasonable share of outstanding students in the physical and life sciences undertake graduate work in nuclear fields. The increased demand for nuclear technology curriculums induced by the awarding of fellowships has stimulated the development of nuclear programs among colleges and universities. The Commission also awards special fellowships in radiological physics, industrial hygiene, and in industrial medicine. There is a steadily increasing demand and need in both Commission facilities and private industrial laboratories for individuals trained in the problems of radiation and toxicology peculiar to nuclear energy operations. The fellowship programs will be expanded in fiscal year 1959 to meet these requirements.

Amounts required for the various fellowship programs are summarized as follows:

	Fiscal year 1957		Fiscal year 1958		Fiscal year 1959	
	Number	Amount	Number	Amount	Number	Amount
Nuclear science and engineering	0	[1] $15,615	85	$300,000	150	$475,000
Radiological physics	117	229,903	129	265,000	163	334,000
Industrial hygiene	9	48,245	3	34,000	5	45,000
Industrial medicine	6	47,631	10	87,000	12	100,000
Total fellowships		344,394		686,000		954,000

[1] Represents administrative costs required to initiate program in fiscal year 1957.

3. Assistance to schools, $4,855,000

Assistance in the form of equipment grants, provision of materials and services, and courses of instruction for high-school and college faculties is offered to educational institutions as an inducement to assume greater responsibility for education and training in the nuclear fields.

Under the equipment grant program, universities are provided funds for the purchase of reactor training equipment, teaching aids, demonstration apparatus, and specialized isotopic and laboratory equipment. The Commission also lends without charge special materials, source materials, and other materials peculiar to nuclear technology to colleges and universities. In addition, AEC will, without charge, fabricate neutron sources and fuel elements, reprocess fuel elements, and perform a number of additional services for universities.

In cooperation with the National Science Foundation, university summer courses emphasizing the utilization of radioisotopes are offered to high-school science teachers in an effort to stimulate student interest in atomic energy at the high-school level. Similarly, summer institutes are offered for faculty members of accredited colleges, universities, and technical institutes to provide basic background in nuclear energy and to develop faculty competence in the nuclear energy field. For those programs which the AEC and NSF sponsor jointly, the NSF pays the stipends, travel, and per diem costs of the teachers and faculty members being trained, while AEC pays the course costs of the institutions providing the training.

The following is a summary of the activities included in this category:

	Fiscal year 1957	Fiscal year 1958	Fiscal year 1959
A. Training equipment:			
(1) Reactor training equipment	$3,369,643	$5,540,000	$2,800,000
(2) Isotope training equipment, life sciences	8,500	1,170,000	600,000
Total training equipment	3,378,143	6,710,000	3,400,000
B. Development of pedagogical tools	0	135,000	50,000
C. Faculty training:			
(1) Radiobiology training for high-school science teachers (in cooperation with NSF)	143,421	171,000	450,000
(2) Radiobiology lecture series (in cooperation with NSF)	0	5,000	10,000
(3) Special faculty training in reactor technology	77,593	383,000	300,000
(4) Research participation program in reactor technology	0	57,000	50,000
(5) Radiobiology training for college faculty (in cooperation with NSF)	0	0	70,000
Total faculty training	221,014	616,000	880,000
D. Nuclear materials services	39,986	226,000	525,000
Total assistance to schools	3,639,143	7,687,000	4,855,000

4. International conferences, exhibits, studies, and other assistance, $4,975,000

The United States is participating in the International Conference on Atomic Energy to be held at Geneva, Switzerland, in September 1958. By agreement with the Department of State, the Commission is responsible for the scientific and technical aspects of the United States participation, including provision of a United States exhibit. In keeping with the role of the United States as world leader in the peaceful uses of atomic energy, it is planned to emphasize the breadth of the United States atomic energy research effort pointing up the many fronts on which research is going forward. Exhibits are therefore planned in the biological and physical sciences, and the power reactors field. There will also be a special demonstration exhibit displaying the progress attained by the United States in controlled thermonuclear research (project Sherwood). An amount of $3,040,000 is estimated for the Geneva Conference.

There is included an estimate of $150,000 for Commission participation in and financial support of topical scientific conferences dealing with various aspects of atomic energy. Direct support and/or attendance by the AEC of such conferences will help keep American scientists abreast of the latest advances in the scientific world and increase the interchange of scientific information among nations.

An estimate of $200,000 is required to permit studies by the AEC of the atomic energy capabilities of cooperating countries and groups of countries in order to provide a base for development of programs of assistance to such nations. It is anticipated that small groups of scientists and engineers, under consultant contracts with AEC, will travel to several nations to examine the working level capabilities with respect to atomic energy activities and prepare recommendations as to specific types of assistance which would be in balance with these capabilities in the way of implementing the President's atoms for peace program.

The United States is continually receiving requests for atomic energy exhibits as part of international conferences, trade fairs, and exhibitions. By agreement with the Government agencies usually concerned with such requests, the Commerce Department and United States Information Agency, the Atomic Energy Commission has been given responsibility for budgeting for overseas nuclear energy exhibits in fiscal year 1959. This new program, estimated at $1,500,000 for fiscal year 1959, assumes participation in 4 exhibitions in the latter part of fiscal year 1959 and advance preparation for 2 in early fiscal year 1960 at a cost of approximately $250,000 per exhibit. It is anticipated that the estimates would provide 2 exhibits in Europe, 1 in Far East, and 1 in Latin America in fiscal year 1959.

The following is a summary of the activities included in this category:

	Fiscal year 1957	Fiscal year 1958	Fiscal year 1959
(a) Special conferences	$63,683	$1,625,000	$3,040,000
(b) Topical conferences	30,612	78,000	150,000
(c) Country program studies	14,108	180,000	200,000
(d) Overseas nuclear energy exhibits	0	337,000	1,585,000
Total	108,403	2,230,000	4,975,000

5. Museum and exhibits, $630,000

The Commission's responsibility under the Atomic Energy Act of 1954 to provide for the dissemination of unclassified scientific and technical information is carried out in part by means of a museum and other visual presentations exhibiting developments in the field of peacetime applications of atomic energy. The American Museum of Atomic Anergy located at Oak Ridge and operated for the Commission by ORINS, serves as an educational information center for visitors from all parts of the United States and from foreign countries. The Commission's traveling exhibits program, operated for the Commission by ORINS, serves as a major instrument for public information by providing mobile exhibits which are toured throughout the country and thus bring the progress of peacetime developments of atomic energy to large audiences at State, county, and local fairs, civic gatherings and similar events. The small industrial exhibits program by the Washington headquarters is designed to meet the needs for specialized exhibits for use at technical and industrial conferences and trade fairs to acquaint audiences composed of industrial, scientific, engineers, and management people, with Commission programs and technical developments. The following is a summary of the activities under this category:

	Fiscal year 1957	Fiscal year 1958	Fiscal year 1959
(a) American Museum of Atomic Energy	$140,391	$135,000	$107,000
(b) AEC traveling exhibits program	373,176	465,000	501,000
(c) Industrial exhibits program, headquarters	0	4,000	22,000
Total museum and exhibits	513,567	604,000	630,000

6. Publications and libraries, $2,137,000

The Commission's technical information program provides information materials and services to science and industry in programs furthering the objectives of the Atomic Energy Act of 1954 "to encourage widespread participation in the development and untilization of atomic energy for peaceful purposes to the maximum extent consistent with the common defense and security * * *" and "to strengthen free competition in private enterprise." In addition, the program implements agreements for international cooperation by furnishing technical information services under the atoms for peace and bilateral agreements programs.

The estimate of $2,137,000 covers activities necessary to fill the needs of science and industry and the needs of the AEC and its contractors for scientific and technical information materials originated within the AEC program. These include the maintenance of classified depository libraries for use by access permit holders, preparation under contract of books compiling technical data essential for peacetime applications of atomic energy, the writing under contract of a series of technical progress reviews to keep industry abreast of current technical developments in the atomic energy field, the translation of technical data from Russian and other foreign language materials, the printing of materials published and distributed under the industrial participation activities of the Commission, and the conduct of a survey and analysis of methods for disseminating technical information as a basis for evaluating the desirability of adapting new or improved methods. The estimate also covers all costs in connection with the operation of the technical information service extension at Oak Ridge for providing (a) both classified and unclassified central AEC publishing, reference,

abstracting, document collection, and distribution services; (*b*) both classified and unclassified technical information services to the Commission's access permit holders under the civilian applications program; and (*c*) primarily unclassified technical information services to domestic depository and educational libraries and to libraries established in foreign countries under the atoms for peace and bilateral agreements programs. The following is a summary of the activities under this category:

	Fiscal year 1957	Fiscal year 1958	Fiscal year 1959
(*a*) Classified depository libraries	0	$20,000	$20,000
(*b*) Contract writing program	$99,554	440,000	325,000
(*c*) Technical progress reviews	33,424	112,000	136,000
(*d*) Translations program	74,000	100,000	100,000
(*e*) Printing for industrial information program	126,696	226,000	130,000
(*f*) Technical information service extension, Oak Ridge	1,244,922	1,623,000	1,426,000
Personal services	872,536	912,000	940,000
Travel	4,278	5,800	6,000
Other objects	368,108	705,200	480,000
Total, publications and libraries	1,578,596	2,521,000	2,137,000

7. *Industrial isotope development, $5 million*

The benefits derived from nuclear radiation and radioisotope use to date represent but a fraction of their full potential. The magnitude of this potential contribution to the national economy requires a major effort to accelerate its early realization. In this connection, the Commission has implemented an industrial isotope-development program encompassing the following activities:

(*a*) Participation with private organizations in research and development to exploit the practical application of radioisotopes to industrial manufacturing methods, processes and products ($2 million).

(*b*) The establishment of radioisotopes technology training institutes for industrial personnel in the technology necessary for practical industrial applications of radioisotopes and nuclear radiation to industry. This program would include the establishment of a prototype industrial course at ORINS to develop the curriculum appropriate for use in industrial courses throughout the United States ($200,000). In addition, postgraduate institutes of isotope technology would be established at educational institutions having established nuclear energy education programs. Each institute will offer courses to industrial scientists and engineers including practical demonstration of industrial applications of radioisotopes and lecture and laboratory instruction in the characteristics of radiation and radiation safety ($700,000). There would also be a program of equipment grants to accredited colleges and universities as an inducement to include instruction in isotope technology in their science and engineering curriculum ($900,000). There will also be a program of producing a series of technical training motion pictures ($200,000).

(*c*) The development of a program to encourage and provide incentives for private production of materials needed for full-scale exploitation of the application of radioisotopes and nuclear radiation ($500,000).

(*d*) Accelerate the development of economic application of high-level radiation to industrial processes. Includes development of fission byproduct utilization radioisotope source technology, irradiation methods, study of high-level radiation phenomena of mossine radiation sources for use in gamma process development facilities ($500,000). The following is a summary of the activities included in this category:

	Actual, fiscal year 1957	Estimate, fiscal year 1958	Estimate, fiscal year 1959
(*a*) Radioisotope application development	0	0	$2,000,000
(*b*) Radioisotope technology training	0	0	2,000,000
(*c*) Industrial isotope production	0	0	500,000
(*d*) Industrial process radiation	0	$350,000	500,000

8. Other training, education, and information activities, $331,000

The Commission conducts on-the-job training and laboratory training for the recipients of fellowships in radiological physics, industrial hygiene, and industrial medicine. The programs are conducted during the summer months and are intended to supplement academic training received at the universities. In addition, summer training courses in radiation protection are offered to help meet the need for training health physicists for AEC installations, industrial, university, hospital, and other Government facilities. The amount of $181,000 is required for this purpose in fiscal year 1959.

The lack of adequate teaching material in nuclear science and engineering has been a severe handicap in encouraging educational institutions to develop teaching capability in nuclear science and engineering. Handbooks, textbooks, and films supported by the AEC have helped to fill a critical gap. The amount of $50,000 is required in fiscal year 1959 for this activity.

A new program offering short courses in such subjects as reactor physics, chemical processing, waste disposal, etc., will be initiated in fiscal year 1959. The purpose of such courses is to supplement curricula offered in colleges and universities thereby providing a means for acquiring highly specialized knowledge in the nuclear field, which is not otherwise available. It is anticipated that students would come from American Government and industry.

9. Equipment not included in construction projects, $433,000

Equipment requirements are estimated at $433,000 for fiscal year 1959. Of this amount, $33,000 is required for additions and replacements of office furniture, machines, and printing equipment in connection with the technical information program. The balance of $400,000 is required to equip the Puerto Rican Training Center scheduled for completion in fiscal year 1959. The following equipment is required to provide adequate equipment for the courses indicated:

(*a*) Graduate studies in the medical school: Equipment for clinical isotope laboratory and basic science laboratories primarily for basic operating tools and for safe isotope handling $91,000

(*b*) Training and research in the application of nuclear energy in cancer: Cobalt 60, 1,500 curies teletherapy unit, and radium supply and related equipment 125,000

(*c*) General isotopes handling equipment for training in radioisotope techniques 35,000

(*d*) Special equipment for Mayaguez reactor facility 149,000

There follows a breakdown of the total equipment costs indicating amounts estimated for each contractor in relationship to its other operating costs under this program.

[In thousands]

Installation	Other operating costs	Equipment costs
Puerto Rican Training Center	$500,000	$400,000
Technical Information Service Extension, Oak Ridge	1,426,000	31,000
Oak Ridge Institute of Nuclear Studies (American Museum of Atomic Energy and AEC traveling exhibits program)	608,000	2,000
All other	18,358,000	0
Total costs	20,892,000	433,000

Mr. RABAUT. The 1958 appropriation was $16,850,000. The 1959 request is for $21,225,000.

ASSISTANCE TO SCHOOLS

Your program of assistance to schools is dropping off from $7,687,000 to $4,855,000.

What is the significance of this change?

Dr. LIBBY. I shall ask Mr. Davis and Captain Shilling, in charge of the programs, to give the answer.

Mr. DAVIS. Our part of this, Mr. Chairman, is the reactor training equipment. This is the amount which has been requested to cover the grants for equipment for engineering schools.

Mr. RABAUT. The question is, What is the significance of this change?

Mr. DAVIS. The significance of the change is that this is the amount that was allowed in the budget for this activity.

Mr. RABAUT. Did you ask for more money for this of the Bureau of the Budget?

Mr. MCCARTHY. No, sir; we did not.

Mr. RABAUT. What is the significance of the change?

Mr. MCCARTHY. The significance of the change, Mr. Chairman, is that in fiscal year 1959 there will be less numbers of grants made to the colleges for this type of equipment.

Mr. RABAUT. Then it is due to the lack of requests for the equipment by the colleges at this time?

Mr. MCCARTHY. Actually at the time this was prepared it was expected that 1958 would be the peak year. There has been an increasing number of requests, and grants to the schools would have to be on a priority basis for both reactor and medical equipment. This program will continue through 1960 and probably thereafter if requests keep coming in.

Mr. RABAUT. Is there a lack of interest in this on the part of the schools?

Dr. LIBBY. No: there is no lack of interest.

Mr. RABAUT. That is almost a 50-percent drop.

Dr. LIBBY. We could use more money, Mr. Rabaut.

Mr. MCCARTHY. Mr. Chairman, 1958 was to be the peak year at the time this budget was prepared.

Mr. RABAUT. I do not care anything about that. I want to know what is the significance of this change. It is a very essential question.

Mr. MCCARTHY. The significance of the change, Mr. Chairman, is that there will not be sufficient money to meet all of the grant requests in 1959 that we now have on hand or expect to receive.

Dr. LIBBY. Did we ask the Bureau of the Budget for more?

Mr. MCCARTHY. I do not believe we did, sir.

Dr. LIBBY. The Commission apparently got what it asked for.

Mr. RABAUT. You did not ask for more money of the Budget Bureau? This is the request that you made and you got it.

Dr. LIBBY. That is the correct information.

Mr. RABAUT. That is the first part of it.

Dr. LIBBY. That is right. The Commission decided that this was the amount we should ask for.

Mr. RABAUT. That is all you asked for, that is all you were permitted to ask for. That is the answer to my question.

INDUSTRIAL ISOTOPE DEVELOPMENT

We have a decrease in the school program, and I note here that we have in the industrial isotope development program an increase from $350,000 to $5 million.

Let us get that justified.

Dr. LIBBY. Let me try that, Mr. Rabaut.

Dr. Pittman, the Director of the Office of Industrial Relations, and I, are very much interested in the isotope program. As I told the committee the other day, without having had any special money spent on isotope development—something on the order of $2 million or $3 million a year here and there in our operations but with no particular money spent for isotope development—isotopes have given us this great benefit which I described to you as being in the general range of $1 billion a year of industrial savings right now.

In view of this, we thought last year that we ought to get busy and see if we could not start a program of purposeful stimulation of new isotope uses as well as an increase in the volume of the uses now being made.

That is what the current $350,000 was spent for. It was made by diversion of funds from other programs to see if this was a good idea. The answer is that it is a good idea and that is why we are asking for the $5 million.

Mr. RABAUT. This is really odd. This one item here deals with universities; does it not?

Dr. LIBBY. Which one, sir?

Mr. RABAUT. The cut from $7 million plus down to $4 million plus.

Dr. LIBBY. Yes, sir.

Mr. RABAUT. That cut results from an expression of the Commission. That is all they asked for. This other is an increase from $350,000 to $5 million. Is that to fit this program under the whole general figure, that we take it off one place and put in someplace else?

Dr. LIBBY. No, sir.

Mr. RABAUT. One deals with universities and studies, with alert minds, and so on, and the other—I do not mean to say there are not alert minds in both places, but the other is an industry affair. It goes to industry for the use of isotopes.

Dr. LIBBY. Largely, yes.

Mr. RABAUT. You have been telling us for 2 days about the need for more students, it would look like something we have as a going concern is now taking a fadeout and the other is getting a terrific buildup.

Dr. LIBBY. No, I can assure you that they are quite unrelated.

Mr. RABAUT. How will you use this $500,000 programed for encouraging private production of isotopes as indicated on page 162?

Dr. LIBBY. I would like Dr. Pittman to answer this question, Mr. Rabaut.

Mr. RABAUT. Under section C:

> The development of a program to encourage and provide incentives for private production of material needed for full-scale exploitation of the application of radioisotopes and nuclear radiation, $500,000.

Mr. PITTMAN. Sir, this will be primarily spent on such things as the separation of highly purified fission products. We now have at Oak Ridge a fission plant for the separation of fission products one from the other. In order to find out how to use these we must prepare them and make them available to industries and educational institutions and the like—such things as promethium, cerium, cesium and so forth.

Mr. RABAUT. Who is going to use this money?

Mr. PITTMAN. This will be used by the Commission, sir, probably mostly at Oak Ridge. We will also use it to produce cobalt-60 to

have available for industrial gamma radiation. We will need this in order to carry forward the large-scale radiation program that we hope to get underway.

Mr. RABAUT. Do you have the page there?

Under section a, how is that $2 million to be used?

Mr. PITTMAN. The first, under section a, will be used for contracts primarily with industrial concerns. The whole objective of this program is to get industry to use radioisotopes in all the various places where they can.

Mr. RABAUT. Who gets this money?

Mr. PITTMAN. This $2 million will primarily be spent through contracts with industrial concerns and with people like Battelle and Armour, with universities, with anybody who is capable of coming up with a new use or an improved use.

Mr. RABAUT. What will you get out of these contracts?

Mr. PITTMAN. Out of these contracts we will get development of new techniques of using isotopes. We will get the information which comes from these developments and we will be able to make that information available.

Mr. RABAUT. It is encouragement to industry, then?

Mr. PITTMAN. Yes.

Mr. RABAUT. This will be to encourage industry and to give you the information that they derive from it, is that right?

Mr. PITTMAN. That is right, sir.

Mr. RABAUT. Who will get the $2 million?

Mr. PITTMAN. The $2 million, sir, under the radioisotopes application——

Mr. RABAUT. The question is, Is the Commission getting the money for its use or industry? Who will get it?

Mr. PITTMAN. Most of it will be spent through contracts with industry. Some of it will be spent in our own laboratories to carry out programs.

Mr. RABAUT. What percentage do you figure you will spend in your laboratories and what percentage will go to industry?

Mr. PITTMAN. We have not worked out the program, sir, but I would imagine it would be about 90 percent to industry and roughly 10 percent in AEC facilities.

Mr. RABAUT. This is for great benefit to industry; is it not?

Mr. PITTMAN. Yes, sir.

Mr. RABAUT. You will get the information back from industry into the AEC; right?

Mr. PITTMAN. That is right.

DISTRIBUTION OF FUNDS

Mr. RABAUT. How much is industry putting into this pragram? Is there any matching funds on the part of industry at all, or is it just an out and out gift?

Mr. PITTMAN. In this particular part of the program, sir, which is just getting started, the idea is that these will be contracts, probably mostly CPFF contracts, with laboratories that have ideas. Of course, industry for 10 or 12 years has been spending its own money in developing the uses of isotopes.

Mr. RABAUT. I know very well what we have done. We have spent a lot of money in this country, not only on this but in the whole program. So is industry putting any money into this at this time?

Mr. PITTMAN. Industry is putting money into it at all times.

Mr. RABAUT. I know about all times. That is the general run of the mill. I am asking is anything being done by industry in relation to this $2 million.

Mr. PITTMAN. This particular program as it is now designed is not a matching program and it is not a sharing program.

Mr. RABAUT. So we are putting the money into it?

Mr. PITTMAN. Yes, sir. We are getting all the information from it, sir.

Mr. RABAUT. I want to ask you one thing: Is this plan very firm?

Mr. PITTMAN. Yes, sir; it is a quite firm plan, sir.

Mr. RABAUT. If it is firm what industries have you in mind to get this? You also mentioned college laboratories would get some of it.

Mr. PITTMAN. $2 million of the $5 million is for a training program, a good portion of which will go into college laboratories.

Mr. RABAUT. I thought we were talking about the $2 million. Is this $2 million a part of the $5 million we talked about before?

Mr. PITTMAN. There are 2 items of $2 million each. One is for contracts with industry and the second $2 million is for the establishment of isotope training courses. That money we will try to fit into the regular educational pattern of undergraduate and graduate schools.

Mr. RABAUT. What industries do you contemplate will use this money?

Mr. PITTMAN. As an example, we have already gone into this and we have a contract with the North American Aviation Co. who is building the so-called Hallam reactor, a sodium-cooled reactor. We are contracting with them to make studies as to the use of the hot sodium, that is, radioactive sodium which comes out of the reactor as a source of high level radiation. Here is a reactor which will be operating in an area where it is possible to use the irradiation from the reactor and we would like to do it.

Mr. RABAUT. Are there applications from various people for the use of this money, especially schools?

Mr. PITTMAN. We are quite confident after having talked to the industrial people in general that there will be plenty of applications for the use of this money. Large numbers of people from the rubber industry, the plastic industry, the oil industry, and others who are very much interested in this program have come in and talked to us.

Dr. LIBBY. We are moving forward on our own initiative on this program. We need your authority and blessing before we can do it to any substantial degree.

Mr. RABAUT. It is not firm yet?

Dr. LIBBY. No, it is brandnew. We spent $350,000 of transferred funds to see if it was a good idea. We think it is a good idea. Now we want to get to work. If you will give us the money we will go to work and will spend it according to this plan. The details will be worked out as we go along.

USE OF FUNDS IN 1958

Mr. RABAUT. Did you transfer funds for this last year?

Dr. LIBBY. The $350,000 that we have spent was from transferred funds, yes, sir.

Mr. RABAUT. Where did those funds come from?

Dr. LIBBY. I shall have to ask Mr. McCarthy.

Mr. MCCARTHY. They were transferred from other programs to industrial isotope development, Mr. Chairman.

Last year, we requested $17.5 million for this program. This committee, reduced this by $1 million, and we did not appeal in the Senate. When we reviewed the program during the year, as Dr. Libby mentioned, there was need for these two surveys to see what this program would do, and funds were taken from other savings.

TRANSFER OF FUNDS BETWEEN PROGRAMS

Mr. RABAUT. What other place have you taken funds from?

Mr. MCCARTHY. None other, sir.

Mr. RABAUT. No other program? This is the only place that you took any funds, $350,000?

Mr. MCCARTHY. We mentioned the Plowshare program yesterday in which we did some survey work within the weapons program.

Mr. RABAUT. You figured it was a related item?

Mr. MCCARTHY. It was closely related.

Mr. RABAUT. Remotely.

Mr. MCCARTHY. No, sir; quite directly.

Mr. RABAUT. We spend a good deal of time here and it is difficult. We are laymen dealing with these scientific problems. We try to get our feet on the ground with it and then we find out shifts of funds are made. It is true the amount of money shifted here is insignificant in relationship to the total program. What funds will we be surprised about next year which you plan to shift around?

Mr. MCCARTHY. None that I am aware of at this time, sir. I believe all of the programs are covered as of this time.

Mr. RABAUT. The future will give us the real answer.

Mr. FLOBERG. The future will, Mr. Chairman. I might point out that this program moves so fast and the developments of scientific knowledge in the nuclear field are so sudden and so spontaneous that I do not think we could guarantee there would not be any changes.

Mr. RABAUT. As these sudden inspirations for improvement come to you during the year, if you are around here you might at least call up and say we are thinking about this or that.

Dr. LIBBY. We will do that.

Mr. RABAUT. I think the committee should be included in that. The program is going to be tighter laced than it was in the past. We figured in the beginning that you had to have great leeway in the program, tremendous leeway. This agency has spent tremendous sums of money. I am not saying it was not spent well or that you would not make the normal mistakes which are likely in a program as big as this. Only the fellow who does not do anything makes no mistakes. The fellow who does something might make a few mistakes depending on what is above his shoulders. So keep us a little bit in

the picture in the future on any changes that you must make. I think we should be informed of it.

Dr. LIBBY. We shall be very happy to do that, Mr. Chairman.

INTERNATIONAL CONFERENCES, EXHIBITS, STUDIES, AND OTHER ASSISTANCE

Mr. RABAUT. You have more than doubled the amount to be used for international conferences, exhibits, studies, and other assistance. Why is this necessary?

GENEVA CONFERENCE

Mr. GARDNER. First, the larger portion of the money is needed because the second international conference on the peaceful uses of atomic energy will take place in Geneva in September of this year. The larger portion of costs of the conference will come in fiscal 1959.

Mr. RABAUT. How much will that amount to?

Mr. GARDNER. At Geneva we will have 4 principal parts: A papers program in which we will present some 170 papers, with 700 papers being in the proceedings; a very extensive film program; a program of technical information and probably the largest exhibit on technical information which has been presented. This will be considerably larger and more extensive than that of any other country, and will show the breadth and depth of our program.

Mr. RABAUT. Will you bare our secrets to the whole world?

Mr. GARDNER. We are going to show our progress.

Mr. RABAUT. We are going to show them more or less what we have under our belt at this time.

Mr. FLOBERG. This is all unclassified information, Mr. Chairman.

Mr. RABAUT. How much money is involved at Geneva?

Mr. GARDNER. For the 2 years a total of about $4.6 million, Mr. Chairman.

Mr. RABAUT. Where does the rest of it go?

Mr. GARDNER. The other portion is for the prospective atomic energy exhibits which will be held in fiscal 1959. We will also be planning in 1959 for possibly two exhibits in 1960. We are being called upon to present atomic energy exhibits around the world, and for this purpose we need the necessary funds.

Mr. RABAUT. What did you say the total figure was, $4.9 million?

Mr. GARDNER. For Geneva, about $4.6 million.

Mr. RABAUT. There is another $300,000.

Mr. FLOBERG. Over 2 years, sir.

Mr. RABAUT. But this figure runs $4.9 million.

Mr. GARDNER. This figure takes in the Geneva Conference and the additional funds which are being requested for future atomic energy exhibits plus a small amount of $150,000 for topical conferences—conferences on specific items—and the country programs studies.

Mr. RABAUT. Travel is included?

Mr. GARDNER. The topical conference includes travel; yes, sir.

FOREIGN EXHIBITS

Mr. RABAUT. On page 159 you indicate that you expect to put on exhibits in 4 foreign countries in 1959 and 2 in 1960, to the tune of

$1.5 million. Where will these be and what are the occasions that make them necessary?

Mr. GARDNER. The exact location has not yet been developed, Mr. Chairman.

Mr. RABAUT. You cannot get them developed until you get the money; is that it?

Mr. GARDNER. Money is very necessary for their development. We have had a number of requests for exhibits and sometimes they come up rather suddenly. This is why we are planning ahead.

Mr. RABAUT. Is this just a standby fund in case something arises that you want to take advantage of when the time comes?

Mr. GARDNER. In my opinion, we have come to the time when we must show our wares, in order that we can show the world what we have in the field of atomic energy and its development.

Mr. RABAUT. Are you planning on some of them for 1959?

Mr. GARDNER. Yes, sir.

Mr. RABAUT. Why not make one that you can move and take to the four places?

My questions are from a layman, as you can understand.

Mr. GARDNER. The difficulty with a portable exhibit is that you cannot show many of the things which are necessary to be shown. Some of the equipment is rather large. Much of the equipment that we will show in Geneva will be what is known as a live exhibit. It will actually be operated by people. A considerable amount of time and money and technical skills are necessary in order to install it and to provide the necessary power, water, and facilities.

Mr. RABAUT. It will be permanent? You will leave it there when you are through?

Mr. GARDNER. No, sir. We use the models and a large amount of equipment. Of course, flooring, the rental of buildings, and such things as shipping from here to the Far East are expensive and are not recoverable.

Mr. FLOBERG. These are technical conferences set up by others outside our control. We are asked to participate. We do not select the site. Somebody else does. For example, just 2 weeks ago I went over to the Fifth International Electronic and Nuclear Congress, which was set up in Rome. We participated in that Conference with a nuclear exhibit which just captured the imagination of the whole Italian press. We have not done a better job of American promotion in Italy in a long time than we did at this little Conference with this exhibit. We had a live reactor there, the first reactor to go critical in Italy. We have a stack of clippings 3 or 4 inches deep from the Italian press lauding the American nuclear progress, including two full pages from the Communist paper in Rome saying what a terrific exhibit this was and what a wonderful job the United States had done in making progress in peaceful use of the atom.

We get stimulation from the State Department, from the Operations Coordinations Board, from the United States Information Service, and from other people of that type to participate in these conferences. We are really an agent of national policy in a certain sense when we do participate in one of them.

I can testify from my own knowledge that we can make a tremendous impact on people if we do a good job in these areas. We did a wonderful job in Rome.

Mr. RABAUT. That is a good statement and I am glad to hear it. Did you have any reflection from those people that they would use this in a practical way?

Mr. FLOBERG. I do not see how it could help making a favorable impression when they are considering those problems, Mr. Rabaut.

Mr. RILEY. May I ask a question there, Mr. Chairman?

Mr. RABAUT. Mr. Riley.

DOMESTIC EXHIBITS

Mr. RILEY. All of these conferences and exhibits such as you have described are abroad?

Mr. FLOBERG. Nearly always they are. I do not know of any contemplated domestically.

Dr. LIBBY. We have a domestic program.

Mr. RILEY. Do you ever have such an exhibit locally that people could go to in this country and have foreign scientists visit here and see the setup in America?

Mr. FLOBERG. We have had some exhibits here, yes. Mr. Gardner, could you tell about them?

Mr. GARDNER. Industry has put on several exhibits. We have a domestic program which can be spoken of later. The exhibit that we had in Geneva in 1955 is now in the Museum of Science and Industry at Chicago as a permanent exhibit.

Mr. RILEY. Is that as up to date as these exhibits that you are showing abroad?

Mr. GARDNER. No, sir; it is not as up to date as the one that we will show in Geneva this year.

Mr. RILEY. Why not? Do you not think our own people should be stimulated?

Dr. LIBBY. Mr. Salisbury is in charge of the domestic exhibits.

Perhaps he can give you a little more detail, Mr. Riley.

Mr. RILEY. Will you take that up later, or does that come right in here?

Dr. LIBBY. It is in a separate item.

Mr. RILEY. I will wait, then.

(Discussion off the record.)

FOREIGN EXHIBITS

Mr. RABAUT. I wish to come back to my question.

How much money would be saved if we had one of these built which could be transported to these different places? We have $1.5 million. That is not a big amount. I hate to mention money of that size. It is an awful amount to the normal man in this world, even to a man who thinks he is well off, but in this program it is not a lot of money. Still we must watch these small amounts and see if some money cannot be saved. That is why we are talking about this idea of transporting it. Here we are talking about building 4 of these exhibits in 4 places which we have not yet selected. Why would we set one of these up knowing it will be moved. We will know what we have to build to go with it, what part of the physical structure we have to leave when we take it away and know where it will fit into the next one that we are building.

It seems to me if that were done we would save money. I am speaking again from the layman's point of view. I am not a scientist. We are charged by the people to look after their funds. We just wonder why we should spend $1.5 million this way when, as the program is presented to us, we do not even know where we are going with it. We do not know if we will have a demand for 4 places, whether we may have a demand for 8 and have difficulty supplying them, whether we may have a difficult job picking 3 places to go, or whether we may end with 1.

I think that is sensible when we are going into the program 2 years from now, in 1960. Two of them are in 1960. Why does the money have to be in here now for something in 1960?

Mr. GARDNER. Mr. Rabaut, there two points I would like to make. Upon the completion of the conference that we will have in Geneva, we will have exhibit assets estimated between $750,000 and $1 million that we can use elsewhere. In the second part of this $1.5 million we are talking about overseas nuclear exhibits where costs are in fabrication of items, the transportation of items, and miscellaneous things such as insurance—usually the fabrication. If we have an exhibit in Italy, the captions all must be in Italian and then it must be fitted to the tempo of the country. If we have to do one in Japan it is quite different, even though we can use the same pieces of equipment.

Mr. RABAUT. That is right, the captions must go on it. Is there anything to stop you people from having 4 sets of captions or 5 sets of captions in different languages after you find out where they are going and fit them into the program and place them on the machines?

Mr. GARDNER. This is usually done.

Mr. RABAUT. That certainly will not cost $2,250,000. This thing gets up to $2,250,000 when you get the reusability of $750,000 worth of material that you have on hand at the present time.

Mr. GARDNER. Our experience is that the recently completed Rome exhibit, where most of the material was on loan to the Atomic Energy Commission, cost us about $250,000. We used this as our planning figure.

Mr. RABAUT. I did not get that.

Mr. GARDNER. The Rome exhibit which has just been completed cost us about $250,000 for transportation, the building of special balconies, fabrication, and so forth. We paid very little for models because most of the models and most of the equipment in that show were on loan to the Atomic Energy Commission from industry or had been purchased otherwise and belonged to the Atomic Energy Commission. When we are talking about an atomic energy exhibit overseas in a distant place all of those things go into it.

Mr. RABAUT. You are talking about transportation of physical structures now.

You take your exhibits and fit them in there.

Mr. GARDNER. The fitting of exhibits into a building is dependent entirely on the shape of the building.

Mr. RABAUT. That is right.

Mr. GARDNER. Sometimes there must be temporary modifications.

Mr. FLOBERG. We are doing exactly what you say, to a very large extent.

Mr. RABAUT. It was not imparted to me that way. I thought you were building four plants. You are talking about the physical structure to hold the plants and the additional expense which goes with the work connected with it, travel and so on. Is that not right?

Mr. GARDNER. That is right.

Mr. RABAUT. For these 4 exhibits that will cost about $2,250,000 because you have $750,000 left out of the exhibit you had at Geneva.

Dr. LIBBY. We have equipment which we can use which is worth that. You remember, Mr. Rabaut, at the end of 1955 when we had finished the first Atoms For Peace Conference we sold the reactor. You remember we built a reactor right there on the ground and it stole the show. It really did. People would line up for blocks just to see this thing. At the end we sold our reactor to the Swiss Government for $180,000. There we had proof of what it was worth. If we had to sell this equipment I am not sure we could realize $750,000, but that is our estimate of what it is worth.

Mr. RABAUT. I am not trying to advocate policy, what you do with your reactors, and things like that, because I would be in the wrong field. I am interested in how much money all these things will cost. We must be interested in that. Everyone in this room is charged with that responsibility.

Mr. FLOBERG. At the Rome exhibit Aero-Jet General supplied a reactor at their own expense which was very much a hit at the show. However, the weight of the thing was so great that we had to shore up the floor to make sure it would not go through and kill a bunch of people. This cost only $3,000 but, nevertheless, it had to be done. This is the kind of unanticipated expense for which you must be prepared.

Mr. RABAUT. Do you think you need all this money for this in view of our discussion here?

Mr. GARDNER. Yes, sir.

GENEVA CONFERENCE

Mr. RABAUT. Last year it was testified on page 124 of the hearings that the $2.5 million budget for the Geneva Conference this September would take care of it. Now you are asking for another $3,040,000 and, in addition to this, the use of other money for the project Sherwood exhibit was recently authorized.

Have you any vague idea of what this conference will cost? What is the additional $3,040,000 for?

Mr. MCCARTHY. May I point out, Mr. Chairman, that the total cost of the Geneva exhibit as shown for the 2 years covers the Geneva Conference.

Mr. RABAUT. What cost is that?

Mr. MCCARTHY. That is shown on the top line, for special conferences. The 1958 and the 1959 costs on page 159 of the justifications total $4,975,000. Included in there is the Sherwood exhibits at the Geneva Conference. Last year we testified that the $2.5 million, would be the cost we would incur in 1958. You notice our costs for 1958 are under that amount. The cost by year is somewhat different.

I believe that this committee did have some testimony on the Geneva exhibit. We, also, sent a letter to the committee on that.

Mr. RABAUT. We have to do all our predicating and our study of the situation on the basis of what is said one year and what is requested the next year and we run into things which require a lot of study on our part. We work hard at it here.

On page 124 of the hearings of last year it says:

> This request will take care of the participation in that scientific conference.

Then down here:

> Mr. FIELDS. That was $2.5 million.
> It is based largely on the number of participants that we estimate we would have on the delegation and includes such items as the travel costs of these participants. Approximately $1 million is included for exhibits that we would propose to set up.

Those are the kinds of statements we get here and we go by these statements.

PUERTO RICAN TRAINING CENTER

On page 164 you show $400,000 for equipment at the Puerto Rican Training Center. This is about as much as our operating costs. What is this for? We had quite a talk about that last year.

We do not want a lot of detail except a breakdown for the record. You might tell us briefly.

Dr. PERKINSON. As you know, this center just started last October. This equipment is needed to get the program really underway.

Mr. RABAUT. We want a breakdown of the equipment for which this money will be used.

Dr. PERKINSON. As shown on page 164, the $91,000 is for equipment for clinical isotope laboratories and basic science laboratories for teaching the medical students and other medical people who wish to learn how to use isotopes in their medical work.

Mr. RABAUT. How much money is for that?

Dr. PERKINSON. $91,000, sir.

Then we have $125,000 for training and research in the application of nuclear energy in cancer. This would include a cobalt 60 teletherapy unit which is very much needed in their training program, a radium supply and the equipment required to handle these radiation sources. We are already getting a good many requests from the Latin Americans for training in this medical field. It is equipment which they do not have at present and which they need very much.

Then there is an item for $35,000 for general isotope handling equipment for training in radioisotope techniques. This is a special course which is given 5 or 6 times a year for people from Latin America. The response to this course is very good so far. It is exactly equivalent to the radioisotope course taught at the Oak Ridge Institute for Nuclear Studies.

Mr. RABAUT. All this teaching down there is in Spanish, is it?

Dr. PERKINSON. Yes, it is all in Spanish.

The $149,000 is for research equipment and fuel elements for the reactor at Mayaguez.

Mr. RABAUT. How much have you in here for nontechnical equipment?

Dr. PERKINSON. For nontechnical equipment?

Mr. RABAUT. Desks, setups and all that sort of thing.

Dr. PERKINSON. We do not have anything of that sort.

Mr. RABAUT. You do not write on the floor, I hope.

Dr. PERKINSON. No. The University of Puerto Rico is furnishing equipment of that sort at present under contract.

Mr. RABAUT. You made a good statement. Thank you.

Dr. PERKINSON. Some of this nontechnical equipment was in the 1958 budget. The furnishings have already been bought.

Mr. RABAUT. This is not on too deluxe a plan, is it?

Dr. PERKINSON. No; I frankly think, sir, this is about as conservative an operation as I have ever had anything to do with.

(Discussion off the record.)

Dr. PERKINSON. May I say in addition, sir, that until we get our buildings constructed this activity is being operated in an old warehouse. It is very simple. The equipment is good and the teaching is very good, which are the important things.

Mr. RABAUT. Is great interest being shown in it?

Dr. PERKINSON. There is only one program which we have had going for any length of time, a radioisotope technique course, with which we are quite satisfied.

Mr. RABAUT. Are they interested in the medical part of it?

Dr. PERKINSON. Yes, we are getting applications for the medical aspects also.

Mr. RABAUT. It seems to be a good program.

Dr. PERKINSON. We think it is going very well. I would like to say I think it will take from 2 to 5 years before the program really reaches its maximum level of activity.

(Discussion off the record.)

ADMINISTRATIVE EXPENSES

Mr. RABAUT. Back on page 156 a little arithmetic shows that your administrative expenses to operate this school will be 33 percent of the amount used for actual training work. In other words, it is $1 to administer each $3 worth of teaching. Are the administrative costs in your other schools in this same ratio?

Give us a breakdown for the other schools as compared to this one.

Dr. PERKINSON. I am afraid we would have to provide that for the record because I do not have this information.

Mr. RABAUT. All right, supply the answer for the record.

(The matter referred to follows:)

Other schools of the Commission, specifically, the Oak Ridge School of Reactor Technology, the International School of Nuclear Science and Engineering and the Oak Ridge Institute of Nuclear Studies, are operated by major contractors. The cost of administration for these schools is not segregated, but is included in the overall total for operations under the contract. Comparable information, therefore, is not available on a current basis and its preparation would require extensive detailed analysis.

The large proportionate share of the cost for administrative expenses in this fiscal year is due to the newness of the center. Considerable administrative time will be required for the development of programs, policies and procedures, prior to the initiation of full-course activities. In future years when the center begins to operate normally, after all facilities are made available, there will be increases in the cost of carrying out the training aspects of the center. It is not anticipated that there will be any large increase in administrative cost above that for fiscal year 1959. Accordingly, it is expected that the ratio of administrative to program expenses should be further reduced in this later period.

Mr. RABAUT. Does it take a third as much to administer it? You ought to know something about that.

Mr. MCCARTHY. I do not believe so. I would have to check it, Mr. Chairman.

Dr. PERKINSON. Sir, I think the reason for this is that we are starting a new program. Therefore, in the beginning we have to build up our administration and then the teaching staff.

Mr. RABAUT. On page 156 down through section f you have the figure $382,000 total. Then you start off with administration in section g and when you get down to the bottom of those 4 or 5 lines the total for the administration is $128,000. That is a ratio that makes you lift up your ears, you know.

Dr. PERKINSON. We don't expect this to continue, sir. It is just in the beginning of the program that we expect this ratio to exist.

Mr. RABAUT. Let us know about it. You will have a chance to make a statement about it in the record.

AEC SCHOOL PROGRAM

Mr. RILEY. Mr. Commissioner, I would like to have a little further information in regard to the schools—how they operate, how you select your students to go to them—Penn State, North Carolina State and Argonne. Is Argonne a private institution?

Dr. LIBBY. The Argonne School of Reactor Technology belongs to us.

Mr. RILEY. That is what I thought. Would you give us a brief summary of what you do in these schools?

Dr. LIBBY. I shall ask Dr. Vander Weyden to give you this.

Dr. VANDER WEYDEN. The items that are listed on page 153, which include the three schools that you mentioned, Mr. Riley——

Mr. RILEY. Also I would like you to include the two courses that you have at Oak Ridge as to who goes there. Take them in the proper order.

Dr. VANDER WEYDEN. These 3 institutions which are listed on page 153 are for the training of foreign students. Through the efforts of the State Department working together with our people, qualified students are selected from other countries. They are first given a 5-month course at either North Carolina State College or at Pennsylvania State University prior to entering the International School of Nuclear Science and Engineering at Argonne National Laboratory. It is a 10-month course with the first 5 months being given in the university and the second 5 months being given at the Argonne school.

Mr. RILEY. Do you have similar advantages for our own people?

Dr. VANDER WEYDEN. Yes, sir. For many years we have had the Oak Ridge School of Reactor Technology, which has been operated specifically for our own people. This has been in operation for some 10 years.

Mr. RILEY. Have you any special courses set up in various universities for the training of our own students, such as at North Carolina State and Penn State?

Dr. LIBBY. I think Mr. Davis can answer that one.

Mr. DAVIS. As Dr. Vander Weyden said, we have had this school at Oak Ridge which has been open only to American citizens. It has been conducted largely on a classified basis at Oak Ridge. It was set up and has been operated as a means of training industrial people in the United States.

The universities have built up their own capabilities for providing comparable courses. As the course material becomes essentially all declassified, universities have been able to take over this educational load. They have been assisted in this of course by our equipment grants, by our provisions of training reactors, and by summer institutes and things of this sort which we have conducted for engineering department faculty members. The result of this has been that when compared to the Oak Ridge School, the universities are now able to offer quite satisfactory courses. In fact, the number of applications that we have received for the Oak Ridge School has dropped to an exceedingly low level. It is our plan that the present class which is there will be the last class. The school will be discontinued at that point because universities are now quite able to take over the load in this country.

Mr. RILEY. Do you furnish information to all universities which request or is it on a selected basis?

Mr. DAVIS. The universities, of course, are able to get any of the information that is unclassified. Their faculty members have attended the various institutes which we have conducted, largely through the American Society for Engineering Education. There is also a program here for summer employment of some of the university faculty members at the laboratories on special projects. We have tried to get the faculty members educated in this field, to encourage the universities, and to get the whole thing back into the normal educational process in the United States.

Mr. RILEY. Could any university or college obtain that information?

Dr. LIBBY. Yes, sir; anybody.

Mr. DAVIS. There is no limitation on the information which is unclassified.

Mr. RILEY. Anybody who is interested can get it.

Dr. LIBBY. Right.

Mr. RILEY. You are going to discontinue the school at Oak Ridge within the foreseeable future; is that right?

Mr. DAVIS. The present class will graduate in August, and it is not planned to have any additional continuation of the Oak Ridge School of Reactor Technology.

DOMESTIC ATOMIC EXHIBITS

Mr. RILEY. Would this be the place to give us some information about exhibits in this country to which young people, especially, could go?

Dr. LIBBY. May I ask Mr. Salisbury to answer your question. We have an exhibit program in this country. He will describe it for you, Mr. Riley.

Mr. RILEY. All right.

Mr. SALISBURY. Sir, this exhibit program is not like the technical exhibits that Captain Gardner was speaking of for use abroad. These

exhibits are aimed to teach (*a*) the general principles of the release of nuclear energy by fission—we shall have to revise them now and get them into the fusion business, too—and (*b*) the national program for development of atomic energy, the power program, the isotope program, the program of regulation, and the program of aid to other countries in developing atomic energy.

Mr. RILEY. Where can you go to see these exhibits and get that visual information, if I might term it that?

Mr. SALISBURY. You can go to Oak Ridge where we maintain year in and year out, month in and month out, the American Museum of Atomic Energy. If you sit quietly long enough the exhibit will come to you. We have three 7,000-square-feet jumbo exhibits, as we call them. We have three mobile exhibits which stay in a fairly large truck and people walk through them. Then we have 13 school exhibits, which are for classes and for organized groups such as women's clubs that want to put on an atomic energy program during the course of their winter's study. These are shipped and then returned in a fairly compact package.

Then there are 2 or 3 others that I won't take time to describe.

Mr. RILEY. How long do you have to make your application before you can hope to get one of these exhibits?

Mr. SALISBURY. The exhibits are scheduled about 6 months ahead. The large ones are scheduled some 9 months ahead. You have to arrange them so the people can run the truck from one place to another with the least amount of backtracking and round-about travel.

Mr. RILEY. Is Oak Ridge the only place that you can go to see a permanent exhibit? You do not have any out West?

Mr. SALISBURY. Not under Commission auspices. We are now talking with some of the operations offices. A number of them want to install exhibits like the American Museum of Atomic Energy at Oak Ridge.

Mr. RILEY. My thinking is that if the younger students, high-school students, could get interested in something like this, we could grow a crop of scientists interested in this, so to speak. You must interest young people if you are to develop scientific and technical people along these new lines.

Mr. SALISBURY. That is why we have more school exhibits than any other kind.

Mr. RILEY. It seems to me that it is not general enough. Am I right or wrong in that? It seems to me it is not reaching enough people.

Mr. SALISBURY. Last year one or more of the exhibits was shown in each of the 48 States, and the attendance was about 4,900,000.

Mr. FLOBERG. In addition to that, Mr. Riley, from time to time we do have open house at the various installations that we have. This also attracts a substantial number of people.

Mr. RILEY. That is very true. The only one that I am acquainted with is Savannah, and that is so vast that you are overwhelmed by the vastness of it. It must be more concentrated than that if the younger minds are to get any value out of it.

Mr. FLOBERG. We had one of these traveling medicine shows that Mr. Salisbury describes out in Montgomery County 3 or 4 months ago, and it attracted a pretty good attendance.

Mr. RILEY. I am sure it would attract any number if they just knew about it. There would be no limit to it.

Mr. SALISBURY. We have no trouble attracting people at the places where the exhibits go. The great trouble is having enough time to get around to all of the places.

Mr. RILEY. That is the point I am making. I am tremendously interested in these young people growing up with this program. We have just scratched the surface now.

Mr. SALISBURY. We have not budgeted for any expansion. We have budgeted and are presenting estimates here for continuation of the program on the basis that it has been run in the past 2 years.

Mr. RILEY. We seem to be more interested in convincing other people that we are the head man in this show instead of trying to bring our own people along and making it possible to continue to be the leaders.

That is all, Mr. Chairman.

Mr. RABAUT. Mr. Evins.

Mr. EVINS. Is an admission charge made to the AEC exhibits in Geneva and elsewhere in Europe?

Dr. LIBBY. No, sir.

Mr. GARDNER. I would like to answer for the scientific exhibit which will be shown at Geneva. There will not be any charge. This is open to the delegates half the day and to the general public the other half of the day.

Mr. EVINS. In other words, we take it to them across the world free, and we do not charge any admission but our own citizens have to pay 50 cents or more to go in to see the Oak Ridge nuclear exhibits. Complaints have been made to me to this effect and I have observed this by personal experience and visits to the Oak Ridge exhibits.

I agree with my colleague, Mr. Riley, that we are not providing advances in atomic information in the United States as we are all over the world. That has been one of the things I have been harping on here for some time. There needs to be a reversal of this trend.

You told us last year that the Oak Ridge Institute was going to continue. Now you tell us this year it will be closed down. The AEC is going to put on a training program in Puerto Rico in their language. Students formerly came to the University of North Carolina and Oak Ridge in my State and at colleges in other States in this country. But now the AEC proposes to close down the training in the United States of America.

Mr. Chairman, we must have a lot of faith in the operation of our Government for us to succeed. The AEC is a great Commission. I have great faith in the Commissioners and the staff. Otherwise, we could not get along in this Government.

COORDINATION OF EDUCATION PROGRAM

They have a huge budget here. It must be approved, in part, on faith. At this very moment another subcommittee is holding a hearing across the hall with the National Science Foundation on a supplemental budget for more scholarships and more fellowships at the same time we are holding one here on education and training.

Too frequently one arm does not know what the other is doing. We had a $90 million scholarship and fellowship program for the

National Science Foundation, which is certainly very substantial. At the same time we are in here with a similar, if not identical, proposal of advances in funds for scholarships.

I believe, Mr. Commissioner, there should be closer coordination in this education and training program with the program of the National Science Foundation.

Dr. LIBBY. We work very closely with them, Mr. Evins. Maybe we could be more close in our relations. But let me call on Dr. Shilling to give you a fill-in on this.

Mr. SHILLING. May I speak for just a moment to this, Mr. Evins?

Three of our programs are operated jointly with the National Science Foundation. The high-school science teacher program is operated jointly with them. The traveling science teachers program is operated jointly with them. We have almost daily contact. The man who runs their program is a long-time friend, and we meet with them at least once a week, talking over our part of the training and education program.

So I think in that particular area we are closely coordinated, sir.

(Off the record.)

FELLOWSHIPS

Mr. EVINS. How much did you spend on fellowships during the current year just ended, the 1958 fiscal year?

Mr. MCCARTHY. Our estimate, Mr. Evins, is $686,000. Some of the travel may not have taken place and may carry over into the new year.

Mr. EVINS. How much are you requesting for 1959?

Mr. MCCARTHY. In 1959, it is estimated that $954,000 will be used.

Mr. EVINS. These will all be granted to students who will attend colleges in our country or abroad, studying nuclear science?

Mr. MCCARTHY. These are all in our country.

Mr. EVINS. There would certainly be nothing wrong with their studying at other places where they are advanced, also.

Dr. LIBBY. I think at this time, Mr. Evins, we have the best schools in this subject, although that is an egotistical way to look at it. The foreigners come here. The day may come when we want to send some of our students abroad, but in this subject I think we are pretty far ahead.

Mr. EVINS. I am not opposed to their attending foreign schools if the skills desired can be obtained there. I am just trying to find out where the fellowships are to be granted and how much.

ASSISTANCE TO SCHOOLS

How much in grants to school did you make in 1958, and how much do you propose in 1959?

Mr. MCCARTHY. The equipment grants to schools in 1959 are estimated to be $3,400,000; in 1958, our estimate is $6,700,000. I believe all of these grants have now been made in 1958.

PUBLICATIONS AND LIBRARIES

Mr. EVINS. Publications and libraries. How much of that is going to schools in the United States and how much to schools abroad?

Mr. SALISBURY. None whatever is going abroad.

Mr. EVINS. You said elsewhere in your budget justification that you have given some 70 countries complete libraries of atomic information. Have you ceased that program?

Mr. SALISBURY. No; not at all.

Mr. EVINS. How many are you supplying with information now?

Mr. SALISBURY. Some 67.

Mr. EVINS. Sixty-seven countries are continuing to be supplied with free library information?

Mr. SALISBURY. Sixty-seven libraries. It is not quite 67 countries.

Mr. EVINS. How much do you have in this budget for library grants to foreign countries for next year?

Mr. SALISBURY. It is not broken down that way. I will have to supply that for the record.

Mr. EVINS. Could you give us an estimate?

Mr. SALISBURY. I would guess somewhere around $30,000 to $40,000. There are very few left to be given. It simply remains to keep them up.

Mr. EVINS. You have about supplied all who have made requests for them?

Mr. SALISBURY. That is right, sir.

Mr. EVINS. How much in the way of grants has been given to libraries in the United States on atomic information?

Mr. SALISBURY. There are 78 depository libraries in the United States.

Mr. EVINS. Do they receive your circulars and publications from time to time?

Mr. SALISBURY. They receive the publications issued by the Atomic Energy Commission in the technical field.

Mr. EVINS. How much dollar-wise would you say in comparison to grants of library information give abroad?

Mr. SALISBURY. Do you want the proportion or absolute dollars?

Mr. EVINS. Approximately.

Mr. SALISBURY. Let me put it at 65 percent United States and 35 percent foreign, simply on the depository libraries. There are many other services besides, including the provision of reports and catalog cards which are included in the library grants.

OAK RIDGE SCHOOL OF REACTOR TECHNOLOGY

Mr. EVINS. You propose to close down the training center at Oak Ridge, I understand?

Mr. MCCARTHY. That is correct, at the conclusion of the current course.

Dr. LIBBY. That is because the universities are taking up the job, Mr. Evins. It always has been our policy to get out of the school-teaching business when the schools could do it.

EQUIPMENT

Mr. EVINS. On page 164 under these installations, you have $18,358,000 for all other installations. What does that embrace? What does that cover?

Mr. MCCARTHY. This is the relationship of the equipment costs to the other operating costs, Mr. Evins. In other words, we try to show the ratio. This item is $433,000 for equipment purchases in 1959, and we show what the operating costs will be in relation to that.

RELATIVE IMPORTANCE OF AEC PROGRAMS

Mr. Evins. All these programs are important—the reactor developing program, the weapons program, education, and information—but if a cut were to be made in some of them, Mr. Commissioner, where would you say that could be made most wisely?

D. Libby. My personal opinion—this will have to be personal, Mr. Evins—is that the last place you want to economize is on training, education and information. As long as you are doing a worthwhile job and getting good students to go into the nuclear field, that is the last place, in my opinion, to cut.

I am somewhat biased, I guess, but that is my personal opinion. I would like to suggest that Mr. Floberg comment on that.

Mr. Floberg. As you say, Mr. Evins, they are all terribly important. The weapons program is one where we respond to the requirements of another department of Government. My natural inclination, and I think the natural inclination of all the members of the Commission, would be not to economize on civilian programs of this kind.

Mr. Evins. You do not feel there is any duplication or any overlapping in your education and training program in connection with the National Science Foundation activities, also?

Mr. Floberg. No significant duplication or overlapping. It is hard to swear there is never any. I believe these programs are well coordinated and that there is very little overlapping.

FOREIGN EXHIBITS

Mr. Evins. How about in these exhibits? Do you not think you could make some reasonable economies in those, Mr. Commissioner? We are having a World Fair at Brussels, with extensive and expensive exhibits, and also are having the Geneva exhibit for which you came in for a supplemental appropriation. There must be an end sometime to these continually mounting expenses.

Mr. Floberg. We participate in the Brussels exhibition in the Science Hall, and we have a small exhibit in the United States pavilion. These are good exhibits. The one in the Science Hall is much more ambitious than the one in the general pavilion, which is strictly a layman's exhibit.

Mr. Evins. In other words, if the State Department gives you a call or letter requesting the AEC to build an exhibit in such-and-such town in Europe, you are inclined to go over there and put one up.

Mr. Floberg. If we have funds available and an exhibit available which can satisfy some demand of the national interest somewhere, we are anxious to cooperate with other parts of the Government.

We do not go around the world looking for places to advertise our exhibits or anything of that sort.

Mr. Evins. I gained the impression that you did not know where you would locate these, but depended upon requests for others. The demands are unceasing.

Mr. Floberg. We do not show them every place we are requested to show them, I assure you. There are plenty of places we are asked to put up displays that we just are not able to cooperate. To the

extent that economies can be achieved in these, I am just as enthusiastic as you are for achieving them.

Mr. Evins. I would like to see some sound economies effected and I would like to see a little more interest manifest in the United States side of your various programs. That is my personal view, and has been for years. We are giving libraries of information, putting up exhibits, and being generous all over the world. At one time we were superior—or felt that we were—in atomic science. We were the nation that developed the atomic bomb and the H-bomb. We had all the strength and felt great pride in it. This was some 15 years ago. But what has happened?

In the past 5 years the sputniks have been developed and our national ego has gone down. We ought to concentrate upon our own needed advances—for our own country—in my view. I represent the Cordell Hull district in Congress so I cannot be charged with being an isolationist. I think we are putting too much emphasis on helping others when we should be building up America. I should like to see more emphasis placed by the Commission at home—programs for the United States.

Mr. Floberg. Maybe we do not have an ambitious enough program domestically and we should take a look at that.

Mr. Rabaut. Mr. Jensen is recognized.

ENCOURAGING STUDENTS TO MAJOR IN SCIENCES

Mr. Jensen. Mr. Chairman, you have covered this training, information and education program pretty thoroughly, I feel. There is one thing I have been deeply interested in for a number of years, which many of the men representing the Atomic Energy Commission know about.

A number of years ago we were all considerably worried about the fact that a small percentage of college students were majoring in sciences. We had quite a discussion in the committee and wondered what we could do. We felt we were lagging behind other countries in education in the sciences.

At that time I came up with an idea that the Atomic Energy Commission should write a letter to the heads of all universities and colleges in the United States of America and ask them to have their science teachers make a statement to their classes and to all the students enrolled, explaining the great need for more students majoring in the sciences.

The members of the AEC who were there, including Dr. Libby——

Dr. Libby. I remember it very well.

Mr. Jensen. Said they would try, which they did. I think it was last year that you gave a report saying that this practice had encouraged many students to major in the sciences.

What is the story today?

Dr. Libby. We are continuing in the same way, Mr. Jensen. You also made a suggestion which we followed out, as well, that we ask our contractor personnel to make themselves available to visit high schools and to help with occasional lectures in this kind of thing.

Mr. Jensen. Yes, I remember that.

Dr. Libby. Quite a bit of this has been going on in our enormous establishment which reaches all over the country. We have impres-

sive figures on the amount of this kind of activity, and we would be glad to furnish it for the record.

Mr. JENSEN. Could you give us some idea of the progress made and the success of it?

Dr. LIBBY. We had a report on it not long ago. I have not in mind the exact figure, but I was very much impressed with the amount of this activity. That is, where a man from one of our contractor establishments goes out and talks to a high-school science class, giving them an idea about the particular appeal of atomic energy and science as a way of life.

I think the bulk of these suggestions have been excellent and have helped to no small degree in interesting more students in following science, and in particular atomic energy.

We were very grateful to you for the suggestion, which has worked very well.

Mr. JENSEN. Of course, I am pleased to hear that report, and I hope you will continue to carry on that sort of program.

Too many young persons are prone to take the easy course. But the nuclear sciences are so fascinating, interesting, and intriguing that I just feel, as I felt then, that all we had to do was to make an attempt to inspire young folks to get into this field.

Certainly this is a scientific world. A farmer today has to farm scientifically or he will soon discover that he is not in a very profitable business. The same thing is true of almost any vocation you get into.

I have made several talks to schools in my district about the need to work harder on all matters connected with science. Those children sat there and you could hear a pin drop. You get a wonderful hand. The faculty came to you afterwards and say, "I am glad you made that talk."

I always say there is no substitute for work, whether physical or mental.

If these students can just see the importance of training themselves in the sciences. Our young folks must be proficient in science or this Nation will fall by the wayside, regardless of how big and fine and good we are.

So I hope that the Commission will spare no effort in promoting the need for the study of all the sciences. Of course, you are more interested in the nuclear science. I hope you will spare no effort in carrying on this educational program.

OPERATING EXPENSES APPROPRIATION

Mr. Rabaut has so often said that we on this side of the table are responsible to the taxpayers of America, and of course, we are just laymen. We have to depend on you folks to save wherever you can safely.

How much is the total in this bill? I know approximately, but what is the total amount you expect to spend in fiscal 1959?

Dr. LIBBY. The total is about $2.5 billion on operating. We will be back in a few days for several hundreds of millions on plant. A lot of money.

Mr. JENSEN. How much carryover have you?

Dr. LIBBY. $49 million in operating.

Mr. JENSEN. That is a lot of money. Of course, if we did not have to spend $38 billion to $40 billion for our military defenses, it would not worry us too much. We could add that proverbial last straw which breaks the camel's back. However, we have just great confidence in you gentlemen who we know are devoted Americans. I shall not put my judgment up against yours in this field.

I say that as a member of this committee which has the responsibility of safeguarding the fiscal policy of this country. I hope that by that simple statement you can understand that it puts a great responsibility on the shoulders of every one of you.

EMPLOYMENT

How many people are presently employed in the Atomic Energy Commission?

Mr. SMITH. It is 6,868.

Mr. FLOBERG. There are 6,868 employees in the Atomic Energy Commission.

Mr. JENSEN. That is the total under the jurisdiction of the Commission?

Mr. FLOBERG. That is right.

Mr. JENSEN. How many people are you requesting in this budget?

Mr. SMITH. There is no change in program direction and administration; 6,868 is the actual total employment, and the number we are requesting is 7,062. There is always a little difference between the ceiling and actual employment.

Mr. JENSEN. So you are asking for how many more?

Mr. MCCARTHY. There is an increase of roughly 200, across the board, above actual employment.

Mr. JENSEN. More than you have presently employed.

Mr. MCCARTHY. That is right.

Mr. JENSEN. In what capacity will those 200 be working? Can you give us a breakdown on that?

Mr. SMITH. The increase is entirely in the programs we have been talking about. About 90 of them are in the weapons program—for shipment guards and the like. The difference beyond that which adds up to 200 is due to the number of vacancies whch always exists between the current ceiling and the actual employment. The increase being requested for next year, exclusive of vacancies, is approximately 100 people, actually.

Mr. JENSEN. One hundred people permanently employed?

Mr. SMITH. That is correct, and 91 or 92 of those are in the weapons program, largely shipment guards.

Mr. Jensen. You feel those employees are actually needed? You could not find those people among the present personnel?

Mr. SMITH. If you increase the size of the weapons program, the amount of material which has to be moved and shipped and the amount of guarding to be done, you must have more guards to perform that duty.

FORT BELVOIR REACTOR

Mr. Jensen. What was the actual cost of the pilot plant you built at Belvoir?

Dr. Libby. Mr. Davis, could you give us the actual cost of the Fort Belvoir installation?

Mr. Davis. I do not have the exact figures at hand, Mr. Jensen, but I believe the total construction cost, including the design, was about $3 million.

Mr. Jensen. That was the first plant of that size that you built; is that correct?

Mr. Davis. No, sir. This is the first plant of that particular type and size that we built. It is really the first one of that size built as a sort of commercial-type plant. Many of our reactor experiments in the past have been about the same general size, but have not been built with the same end objective and the same philosophy.

Mr. Jensen. Could a duplicate of that plant be built for a little less money today?

Mr. Davis. Since the time that was contracted for there have been fairly substantial escalations in the cost of labor and materials. Although a somewhat more simplified and improved plant could be built, the best indication we have from the contractor who built the plant is that they would probably build another one for about the same price. Taking both of these factors into account they would about balance.

SMALL POWER REACTORS

Mr. Jensen. The reason I asked those questions is this: Would there be any point, as I think there is, in building possibly half a dozen of such plants in the areas where high electric power rates exist over the Nation, for more than one reason: First, to have those little plants available in those sections where they could be studied by the students who are majoring in the nuclear sciences. It would not be a total waste of money, either, because that power could be sold to a private utility, a municipality, or REA, or whatever you cared to do with it. The plant generates how much power?

Mr. Davis. About 2,000 kilowatts.

Mr. Jensen. A little plant like that would take care of a small village, which would be in a position to help pay back the expense, commensurate with the cost of conventional power. Maybe the smaller towns would not like to have an atomic-energy plant close to the town, but with little plants like that, properly shielded as the one at Belvoir, there is not a chance in 10 million, is there, that you would ever have an accident? Is that right?

Dr. Libby. That is correct.

Mr. Jensen. It just appears to me that that would be an economical way to get a good, practical exhibit in many places for not too much money.

Dr. Libby. The second round is somewhat similar to your suggestion. You know we are building a number of little ones on the second round. These are not Fort Belvoirs. Each one is an experiment to advance the art and is not a copy of Fort Belvoir directly. They

are small and are in small communities. This is similar to what you are suggesting, Mr. Jensen.

Mr. JENSEN. How many of them?

Dr. LIBBY. We have only 4 or 5 at the most being considered now.

Mr. JENSEN. You are considering it.

Dr. LIBBY. The contract for Piqua is being signed, and for Elk River the contract is signed.

Mr. JENSEN. What capacity are those?

Mr. DAVIS. Piqua, I think, is 12,500, and Elk River is 22,000 kilowatts.

Dr. LIBBY. They are bigger than Belvoir.

Mr. DAVIS. Larger; yes, sir.

Dr. LIBBY. I was wrong. They are bigger than you mentioned.

Mr. DAVIS. A plant very nearly identical in many respects with the Fort Belvoir plant is now under contract in Alaska as a joint project of the Army and the Air Force there. There will be a second plant based on that in Alaska.

Mr. JENSEN. This little plant out here at Belvoir is a neat job. I learned more and got a better understanding of just how atomic power is made than I could have gotten by sitting in this room and listening to you folks for several days. Seeing is worth an awful lot when it comes to getting firsthand knowledge of any problem.

After listening to you men and then seeing it, I could bring the hearing and the seeing together and get a pretty good layman's idea of just what the whole program is.

Mr. Rabaut and I went to Dounreay in Scotland and saw that big breeder plant. It is so big and overwhelming that it almost scares you to look at it. A student who wants to major in the field of atomic science would be dumbfounded on his first look at that plant, whereas looking at a small plant he would get a very good idea of it and would be greatly inspired.

I am glad to know that you are getting into that field, but I think it would be more to the point to construct more small-capacity plants similar to Belvoir than just a few plants which are 10 or 15 times larger, for the very reasons that I have stated.

I just throw that out as a suggestion.

Dr. LIBBY. I think, as Mr. Davis said, it will not be many years until we shall be getting atomic power much cheaper. Mr. Davis referred to that yesterday. When these Fort Belvoir-types drop a bit in price, it will be much easier to manage. This should not be too long.

Mr. JENSEN. I hope you do not spend more money than is necessary constructing huge, great capacity, atomic-energy plants until you have conducted sufficient research and have complete know-how concerning what you can do. Where additional electric power is needed, private industry is building the plants. REA's and municipalities are building the needed conventional plants. The Government is building hydro plants. Private industry is building hydro plants.

So there is no need for a great rush to get electric power produced from atomic energy in this country, as I see it. I think almost everybody would agree with that statement.

I am through now, Mr. Rabaut.

(Off the record.)

Mr. Rabaut. Dr. Fenton.
(Off the record.)

Training, Education, and Information Program

ASSISTANCE TO SCHOOLS

Mr. Fenton. Coming back to the subject of the training, education, and information program, assistance to schools has been dwelt upon at some length this morning. The appropriation you asked for this year is less than last year's, and still is more than the year before, 1957. Was the assistance-to-schools program based on requests at the time the budget was prepared and the increased requests received after the budget preparation?

Mr. Floberg. I am not sure I understand your question, Dr. Fenton.

Mr. Fenton. Was the appropriation you requested at the time of the budget the same as asked here, or was an increased request received after your budget preparation?

Mr. McCarthy. You are referring to the increased requests from universities and whether they came after the budget preparation.

Mr. Fenton. Yes.

Mr. McCarthy. I believe part of them may well have been in hand, although I do not think we anticipated the number of requests that we got.

Mr. Shilling. That is correct.

Mr. McCarthy. The grants are made twice a year. I believe we make the first grant in January.

Mr. Davis. We have been making them at intervals. I do not know the exact scheduling. The requests are received on a continuing basis. We accumulate them and then take action on the groups that we have at regular intervals. I cannot say at the moment whether it is twice a year or not.

SELECTION OF STUDENTS

Mr. Fenton. You have talked so much about schools—Pennsylvania State University, North Carolina, Argonne, and so forth. I may have missed this, and I do not know whether or not it is repetitious. How do you select the students from the high schools?

Dr. Libby. Dr. Vander Weyden covered that, and we shall ask him to state that again.

Dr. Vander Weyden. We have a selection committee for the training of people under the foreign program. There is a selection committee composed of people from the State Department, ICA, and the Atomic Energy Commission. There are many requests from foreign countries for the training of students. We have a committee which goes through the selection process to take those who are qualified to enter this training program.

Mr. Fenton. This is foreign students?

Dr. Vander Weyden. Yes, the specific one you are referring to is the training program involving these institutions.

DOMESTIC TRAINING COURSE

Mr. Fenton. Have you a program for American boys?

Dr. Vander Weyden. Yes, sir; we have had one for 10 years.

Mr. FENTON. Where is that?

Dr. VANDER WEYDEN. The Oak Ridge School of Reactor Technology was set up primarily for classified information, and this has been operating some 10 years. Students come from universities and from industry and receive training specifically in reactor technology.

Mr. FENTON. How long is the course?

Dr. VANDER WEYDEN. The Oak Ridge school course, the domestic one, I believe operates for 1 year. This program for the foreign students operates with the first 5 months of instruction at either Pennsylvania State University or North Carolina State College and then the second 5 months at the Argonne School for training with the actual equipment.

Mr. FENTON. What do those students do when they have completed the course?

Dr. VANDER WEYDEN. In the case of the domestic program they go back into industry or the universities and usually participate directly in the atomic-energy work. In the case of the foreign program, a large number are absorbed within the individual atomic-energy programs in the foreign countries.

Mr. FENTON. You do have a followup on those?

Dr. VANDER WEYDEN. Yes.

Mr. FENTON. How long has the program been going now?

Dr. VANDER WEYDEN. You mean the domestic program or the foreign one?

Mr. FENTON. Both of them.

Dr. VANDER WEYDEN. The domestic program, as I mentioned, has been in effect almost from the beginning of the project, for at least 10 years. The international program has been going about 3 or 4 years.

INDUSTRIAL ISOTOPE DEVELOPMENT

Mr. FENTON. The isotope increase is from $350,000 to $5 million. Those radioisotopes are mostly industrial, as I understand.

Dr. LIBBY. They are used for research and they are used for medicine, as you know, Doctor.

Mr. FENTON. In other words, it is mostly for peacetime use.

Dr. LIBBY. Mostly for peacetime, although I must say isotopes make bombs, too. They are good for everything.

Mr. FENTON. In this particular program, what is the main objective?

Dr. LIBBY. Doctor, last year we made this look-around, this totaling up, this assessment of the benefits from isotopes. Many of us were surprised at the magnitude of the savings from isotopes.

Then, as we told the committee a little earlier, we asked ourselves the question, in carrying out our responsibility under the Atomic Energy Act, to promote the peaceful uses as well as to keep the military applications developing, whether we should not try to increase rapidly the application of isotopes. This money was spent in a feasibility study and assessment, a consideration of the advisability of launching a $5 million program, for which we are asking you for funds.

This program has not been launched and will not be launched, of course, until we get your approval.

The $350,000 was in the nature of finding out whether this was a good idea to suggest to you. I am sure that everyone will agree that the studies and results indicate there are very few places in the atomic energy program where there is a more immediate and a larger percentage return than in the isotope program. One hundred to one is what you get back, or maybe more, in my opinion, which is a big return.

Mr. Fenton. Mr. Chairman, that is all I have.

Community Program

Mr. Rabaut. Now we shall take up the community program.

We shall insert pages 165 through 177 of the justifications in the record.

(The pages referred to follow:)

Community Program, Operating Costs

Program statement

Estimate, fiscal year 1959	$15,000,000
Estimate, fiscal year 1958	17,921,000
Decrease	2,921,000

The community program provides for operation and administration of AEC operated communities, including municipal services, utilities, hospitals, housing, and commercial properties in the AEC controlled and operated communities of Oak Ridge, Tenn., Richland, Wash., and Los Alamos, N. Mex. These operations are carried out principally under cost-type contracts. Commercial facilities are generally operated by private enterprise through lease or concession agreement. Housing and utilities are provided also for project-connected employees at Sandia, N. Mex., Naturita, Colo., and Monticello, Utah.

The Commission is currently disposing of housing and commercial properties at Oak Ridge, Tenn., and Richland, Wash., in accordance with the community disposal legislation. The disposal schedules for real estate are based on the assumptions provided by the Housing and Home Finance Agency, the Agency assigned responsibility for the real estate disposal activities at Oak Ridge, Tenn., and Richland, Wash. Disposal schedules included in the following pages reflect disposal of all single and duplex housing and disposal of a major part of the apartments, dormitories, and commercial properties by the end of fiscal year 1959.

Disposition of Commission-owned housing units at the Colorado communities of Slick Rock and Uravan, Colo., was completed in fiscal year 1958 and it is planned to dispose of the housing units at Naturita, Colo., during fiscal year 1959.

Under the community disposal legislation, it is intended that the communities of Richland, Wash., and Oak Ridge, Tenn., will incorporate and take over the responsibilities of self-government of the communities. The community of Richland, Wash., is currently planning incorporation in late fiscal year 1959, this timing being such that no transfer of facilities will take place in fiscal year 1959. The community of Oak Ridge is planning incorporation in either fiscal year 1960 or 1961.

The decrease in gross cost levels of $2,921,000, as reflected in the summary table, is principally attributed to the decreased cost of operation and maintenance of real estate at Oak Ridge, Tenn., and Richland, Wash. The reduction in gross cost for real estate at Richland, Wash., is $1.6 million and at Oak Ridge, Tenn., is $0.7 million. Other major reductions in cost level are $0.3 million for property disposal costs and $0.2 million for municipal services, which is principally a reduction in the Commission's cost of school support at Richland, Wash.

While the gross cost level decreases $2.9 million, the net cost to the Commission after application of revenues increases $0.8 million from fiscal year 1958 and increases $4.7 million from fiscal year 1957. This increase in net operating costs is principally attributable to the disposal of real estate with the resultant loss of income.

The revenues from community operations are included under the budgetary item "Revenues applied" as a reduction in the operating expenses appropriation. A summary comparison of community operating costs and revenues, exclusive of services provided production facilities, is shown in a table on the following page. Tables of operating cost and revenue by category for each community are included in the pages following.

Summary of community costs and revenues

	Actual, fiscal year 1957	Estimate, fiscal year 1958	Estimate, fiscal year 1959
Operating costs:			
Oak Ridge, Tenn	$7,922,898	$7,241,000	$6,250,000
Richland, Wash	5,022,091	5,518,000	3,510,000
Los Alamos, N. Mex	4,444,867	4,738,000	4,857,000
Sandia, N. Mex	299,948	343,000	343,000
Grand Junction, Colo	87,833	81,000	40,000
Total operating costs	17,777,637	17,921,000	15,000,000
Revenues (budgeted under "Revenues applied"):			
Oak Ridge, Tenn	7,851,341	5,239,000	4,126,000
Richland, Wash	5,957,848	4,718,000	2,035,000
Los Alamos, N. Mex	4,637,540	4,740,000	4,820,000
Sandia, N. Mex	457,517	454,000	454,000
Grand Junction, Colo	83,713	92,000	38,000
Total revenues	18,987,959	15,243,000	11,473,000
Net operating costs:			
Oak Ridge, Tenn	71,557	2,002,000	2,124,000
Richland, Wash	−935,757	800,000	1,475,000
Los Alamos, N. Mex	−192,673	−2,000	37,000
Sandia, N. Mex	−157,569	−111,000	−111,000
Grand Junction, Colo	4,120	−11,000	2,000
Total net operating costs	−1,210,322	2,678,000	3,527,000

OAK RIDGE

The fiscal year 1959 estimates for Oak Ridge are based on continued operation and maintenance by the AEC of all municipal facilities and utilities. Sale of real estate will continue in fiscal year 1958 and fiscal year 1959, resulting in a reduction in operating costs and revenues on real estate. Estimates are based on Housing and Home Finance Agency's assumption that all property will have been sold by the end of fiscal year 1959, with the exception of 30 percent of the apartments and 19 percent of commercial and nonresidential property. (See table II.) The proceeds of the AEC real-estate liquidation program were approximately $18.1 million through April 1958.

No assistance payments to a local entity will be required in fiscal year 1959, since it is assumed that municipal installations and activities, schools, the new hospital, and the electrical, water, and sewerage utilities, will not be transferred under the Atomic Energy Community Act of 1955 to other entities until after the end of fiscal year 1959. It is assumed that Oak Ridge will not elect to incorporate until calendar year 1960 at the earliest.

The level of expenditures for municipal and school operations will support adequate but not extravagant standards of services. The number of persons employed in the various municipal activities does not exceed and in some cases is substantially less than the average number employed in cities of comparable size elsewhere in the United States. Oak Ridge municipal per capita costs approximate national averages. At Oak Ridge the schools are supported entirely with AEC funds, there being no financial support from the State of Tennessee nor Anderson County. Per pupil expenditures of $300.21 closely approximate the national average of $295, but are substantially higher than the Tennessee average of $168.

Expenditures for hospital operations at Oak Ridge continue at approximately the same level as for the past few years. Hospital costs include consideration of only the minimum maintenance required to keep the present war-built facilities in repair until the new hospital can be completed. Rates charged for rooms and services compare with those prevailing in the general vicinity.

Additional details are presented in tables I and II on succeeding pages.

TABLE I.—*Community operating costs, Oak Ridge, Tenn.*

	Actual, fiscal year 1957	Estimate, fiscal year 1958	Estimate, fiscal year 1959
Operating costs:			
(a) Municipal	$3,655,805	$3,734,000	$3,640,000
(b) Utilities	648,809	680,000	684,000
(c) Real estate	1,837,982	1,030,000	310,000
(d) Hospital	1,318,989	1,332,000	1,312,000
(e) Property disposal	318,269	310,000	188,000
(f) Equipment	143,044	155,000	116,000
Total operating cost	7,922,898	7,241,000	6,250,000
Revenues (budgeted under revenues applied):			
(a) Municipal (including tax equivalent revenue)	690,527	901,000	975,000
(b) Utilities	1,383,479	1,428,000	1,491,000
(c) Real estate	4,511,730	1,617,000	367,000
(d) Hospital	1,265,605	1,293,000	1,293,000
Total revenue	7,851,341	5,239,000	4,126,000
Net operating costs:			
(a) Municipal	2,965,278	2,833,000	2,665,000
(b) Utilities	−734,670	−748,000	−807,000
(c) Real estate	−2,673,748	−587,000	−57,000
(d) Hospital	53,384	39,000	19,000
(e) Property disposal	318,269	310,000	188,000
(f) Equipment	143,044	155,000	116,000
Total, Oak Ridge	71,557	2,002,000	2,124,000

TABLE II.—*Commissioned-owned "private use" properties for sale under Public Law 221, Oak Ridge, Tenn.*

	Inventory July 1, 1956	Estimated number of units remaining unsold		
		June 30, 1957	June 30, 1958	June 30, 1959
Residential:				
Single and duplex housing	[1] 4,360	539	28	0
Apartments	[2] 258	258	178	78
Dormitories	7	7	4	0
Vacant and privately developed land	1,604	1,475	557	0
Subtotal, residential	6,229	2,279	767	78
Commercial and nonresidential	239	238	113	46
Grand total	6,468	2,517	880	124

[1] Includes 3,526 single family houses and 834 duplex houses (1,668 family units).
[2] 2,080 family units.

RICHLAND

The fiscal year 1959 estimates for Richland are based on continued operation and maintenance by the AEC of all municipal facilities and utilities, with the exception of the Kadlec Hospital and the community telephone system. As the sale of the community residential and commercial property continues, operating costs and revenues on real estate will decrease. Estimates are based on Housing and Home Finance Agency's assumption that all property will have been sold by the end of fiscal year 1959 with the exception of approximately 3 percent of single and duplex housing, 40 percent of the dormitories, and 44 percent of commercial and nonresidential property. (See table II.) Proceeds of the AEC real estate liquidation program were approximately $12.1 million through April 1958.

Assistance payments will be made in fiscal year 1959 to the Kadlec Methodist Hospital, which was transferred to the Methodist Board of Homes and Hospitals in September 1956, under the provisions of Public Law 221 (84th Cong.). The assistance payments approximate the operating deficit anticipated for the budget year. No assistance payments to other local entities will be required in fiscal year 1959, since it is assumed that remaining municipal installations

and activities, and the electrical, water, and sewerage utilities will not be transferred until after the end of fiscal year 1959. It is currently contemplated that incorporation of the Richland community will take place late in fiscal year 1959. The level of expenditures for municipal and school operation will support adequate but not extravagant standards of service. The number of people in the various municipal activities does not exceed and in some cases is substantially less than the average number employed in cities of comparable size elsewhere in the United States. Per capita costs are somewhat higher at Richland, due to the fact that salaries of police and fire personnel are comparable with those in the plant area rather than those prevailing in other cities.

The Richland School District is already established as a political unit in the State of Washington and receives annual contributions from AEC under the authority provided in the Atomic Energy Act of 1954. The fiscal year 1959 budget estimates were prepared on the assumption that this type of financial assistance will continue until the school facilities are transferred to the Richland School District, which is currently planned by the end of fiscal year 1959 after which time related assistance payments under the provisions of the Atomic Energy Community Act of 1955 (Public Law 221) will be made. Total expenditures per pupil in Richland schools of $348.86 are slightly higher than the average for the State.

Under the provisions of chapter 7, Public Law 221, the community telephone system was sold to the General Telephone Co. on July 1, 1957. Because the communications system is now owned by a private utility, no assistance payments are made.

Additional details are presented in tables I and II on succeeding pages.

TABLE I.—*Community operating costs, Richland, Wash.*

	Actual, fiscal year 1957	Estimate, fiscal year 1958	Estimate, fiscal year 1959
Operating costs:			
(a) Municipal (exclusive of schools)	$1,494,167	$1,595,000	$1,643,000
Schools	762,009	799,000	587,000
(b) Utilities	710,456	524,000	536,000
(c) Real estate	1,592,619	2,044,000	440,000
(d) Hospital	179,402	0	0
(e) Property disposal	153,478	369,000	165,000
(f) Equipment	50,700	20,000	12,000
(g) Assistance payment (hospital)	79,260	167,000	127,000
Total operating cost	5,022,091	5,518,000	3,510,000
Revenues (budgeted under revenues applied):			
(a) Municipal (including tax equivalent revenue)	145,110	428,000	406,000
(b) Utilities	1,498,568	1,256,000	1,266,000
(c) Real estate	4,194,303	3,034,000	363,000
(d) Hospital	119,867	0	0
Total revenue	5,957,848	4,718,000	2,035,000
Net operating cost:			
(a) Municipal (exclusive of schools)	1,349,057	1,167,000	1,237,000
Schools	762,009	799,000	587,000
(b) Utilities	−788,112	−732,000	−730,000
(c) Real estate	−2,601,684	−990,000	77,000
(d) Hospital	59,535	0	0
(e) Property disposal	153,478	369,000	165,000
(f) Equipment	50,700	20,000	12,000
(g) Assistance payment (hospital)	79,260	167,000	127,000
Total, Richland	−935,757	800,000	1,475,000

TABLE II.—*Commission-owned "private use" properties for sale under Public Law 221, Richland, Wash.*

Residential	Inventory July 1, 1956	Estimated number of units remaining unsold		
		June 30, 1957	June 30, 1958	June 30, 1959
Single and duplex housing	[1] 4,805	4,791	1,543	138
Apartments	[2] 17	17	17	0
Dormitories	25	25	25	10
Vacant and privately developed residential land	253	228	100	0
Subtotal, residential	5,100	5,061	1,685	148
Commercial and nonresidential	325	325	325	144
Grand total	5,425	5,386	2,010	292

[1] Includes 3,787 single-family houses, and 1,018 duplex houses (2,036 units).
[2] 144 family units.

LOS ALAMOS

The community of Los Alamos, N. Mex., was built and is currently maintained to support the research and development efforts of the Los Alamos Scientific Laboratory. Average population during fiscal year 1957 was 13,165 and is expected to be 13,735 in fiscal year 1959. Municipal services, excluding schools, will be maintained at the fiscal year 1957 level despite increased demands for these services resulting from population growth and removal of security requirements for admission to the community. The enrollment of the Los Alamos school system will increase from 3,488 in fiscal year 1957 to 4,012 in fiscal year 1959. The additional staff required to accommodate the increase, coupled with higher teachers' salaries, and additional contributions to the teachers' retirement fund necessitated by changes in State law will result in higher total school costs in the budget year. Utility services will be expanded in fiscal year 1959; however, the increased costs will be offset by additional revenues. The increased number and age of housing units coupled with the need for additional expenditure for cyclical maintenance and structural repairs will result in greater real-estate costs. Equipment expenditures will provide for limited replacement of overage stoves and refrigerators, plus necessary office, hospital, and communication equipment. A full year's occupancy of group 18 housing will increase utility and housing revenues.

	Actual, fiscal year 1957	Estimate, fiscal year 1958	Estimate, fiscal year 1959
1. Gross cost:			
(*a*) Municipal	$1,349,679	$1,562,000	$1,652,000
(*b*) Utilities	743,376	757,000	778,000
(*c*) Real-estate operations	1,467,669	1,523,000	1,564,000
(*d*) Hospital	690,406	690,000	690,000
(*e*) Equipment	193,737	206,000	173,000
Total gross costs, Los Alamos	4,444,867	4,738,000	4,857,000
2. Revenue (budgeted under "revenues applied"):			
(*a*) Municipal	17,036	17,000	17,000
(*b*) Utilities	1,279,201	1,296,000	1,319,000
(*c*) Real-estate operations	2,885,240	2,971,000	3,028,000
(*d*) Hospital	456,063	456,000	456,000
Total revenue, Los Alamos	4,637,540	4,740,000	4,820,000
3. Net:			
(*a*) Municipal	+1,332,643	+1,545,000	+1,635,000
(*b*) Utilities	−535,825	−539,000	−541,000
(*c*) Real-estate operations	−1,417,571	−1,448,000	−1,464,000
(*d*) Hospital	+234,343	+234,000	+234,000
(*e*) Equipment	+193,737	+206,000	+173,000
Net, Los Alamos	−192,673	−2,000	+37,000

SANDIA

Sandia constitutes a small AEC community of 1,487 residents located within Sandia Base at Albuquerque, N. Mex. The Sandia Corp., operator of the laboratory, is responsible for the operation and maintenance of all AEC community facilities. Total program costs are expected to remain at the current year level. Completion of cyclical maintenance work will reduce municipal and real-estate costs while the need to replace overage stoves and refrigerators will necessitate additional equipment expenditures. No change in revenues is anticipated.

	Actual, fiscal year 1957	Estimate, fiscal year 1958	Estimate, fiscal year 1959
1. Gross cost:			
(a) Municipal	$76,038	$77,000	$73,000
(b) Utilities	41,238	41,000	41,000
(c) Real-estate operations	181,011	225,000	210,000
(d) Equipment	1,661	----------	19,000
Total gross costs, Sandia	299,948	343,000	343,000
2. Revenue (Budget under "Revenues Applied"):			
(a) Utilities	67,038	66,000	66,000
(b) Real estate operations	390,479	388,000	388,000
Total revenue, Sandia	457,517	454,000	454,000
3. Net:			
(a) Municipal	+76,038	+77,000	+73,000
(b) Utilities	−25,800	−25,000	−25,000
(c) Real-estate operations	−209,468	−163,000	−178,000
(d) Equipment	+1,661	0	+19,000
Net, Sandia	−157,569	−111,000	−111,000

GRAND JUNCTION

The fiscal year 1959 estimate provides for operating rental housing at the processing plants in Naturita, Colo., and Monticello, Utah, as well as trailer housing in the Grants, N. Mex., area. The objective in providing housing at the processing plants is to hold an adequate, competent and stable labor force for processing and production operations. Trailer housing in the Grants, N. Mex., area provided for rental by AEC resource evaluation personnel. Currently there are a total of 117 units available: 49 at Naturita, 63 at Monticello, and 5 at Grants. Included in the 63 units at Monticello is a 10-bed guesthouse and 22 house trailers. During fiscal year 1959 it is planned to eliminate 3 trailers at Monticello, provide 3 additional trailers at Grants, and to sell, by December 31, 1958, the Commission-owned houses at Naturita. As a result, the Commission will be operating only 68 units by the end of fiscal year 1959 compared to 117 units at the end of fiscal year 1958.

The decrease in operating costs and revenues from the fiscal year 1958 estimate is the direct result of the disposal during fiscal year 1958 of housing units at Slick Rock and Uravan, Colo., as well as the operation of housing at Naturita for only a portion of fiscal year 1959.

	Actual, fiscal year 1957	Estimate, fiscal year 1958	Estimate, fiscal year 1959
1. Gross cost: Real-estate operations	$87,833	$81,000	$40,000
2. Revenues: Real-estate operations	83,713	92,000	38,000
3. Net: Real-estate operations	4,120	−11,000	2,000

Mr. RABAUT. The 1958 appropriation was $17,921,000, and the request for 1959 is down to $15 million.

Mr. MCCARTHY. With the disposal of our properties, Mr. Chairman, we do not maintain them, and therefore we do not have the cost.

At the same time, however, we also will lose the revenues, so our net costs will increase.

Mr. RABAUT. The decrease is $2,921,000.

PROGRAM DIRECTION AND ADMINISTRATION

Mr. RABAUT. Now we shall go to "Program direction and administration." We shall insert pages 178 through 191 in the record.

(The pages referred to follow:)

PROGRAM DIRECTION AND ADMINISTRATION, OPERATING COSTS

Program statement

Estimate fiscal year 1959	$46,600,000
Estimate fiscal year 1958	44,704,000
Increase	1,896,000

General direction of Commission programs is executed by Commission employees budgeted under "Program direction and administration." The employees budgeted under this program are responsible for (1) arranging for the work to be accomplished, and negotiating and administering production, research and development, construction, and related contracts; (2) maintaining necessary liaison with contractors to assure protection of the Government's interest in contract performance; (3) developing standards and control measures for internal security and protection of Government funds and property; (4) encouraging private civilian applications of atomic energy, granting licenses for peaceful uses of atomic energy, and conducting compliance inspections of licensees; (5) conducting a program of cooperation with other nations; and (6) providing normal administrative and management services required within the agency.

During fiscal year 1957, program direction and administration activities were conducted through the Washington headquarters and 10 operations offices and their subordinate area offices. Due to certain reorganizations of field offices, there will be 11 operations offices by the end of fiscal year 1958 and 12 operations offices by the end of fiscal year 1959. Effective March 15, 1958, the Pittsburgh area office, formerly reporting to the Chicago Operations Office, was redesignated the Pittsburgh Naval Reactors Operations Office. Effective July 1, 1958, the Schenectady Operations Office has been redesignated the Schenectady Naval Reactors Operations Office. Effective July 1, 1958, the Lockland area office, formerly reporting to the Chicago Operations Office, has been redesignated the Lockland Aircraft Reactors Operations Office, with Hartford as a subordinate area office. The changes will consolidate administrative and technical supervision of the Pittsburgh and Schenectady offices in the Naval Reactors Branch and the Lockland office in the Aircraft Reactors Branch of the Washington Division of Reactor Development.

The costs of program direction and administration include the costs of personal services, travel, supporting costs for office operation and maintenance, certain activities conducted directly by the Commission, and contributions to the civil service retirement fund. The fiscal year 1959 estimates are based on reaching by June 30, 1958, a strength of 4,881 permanent full-time employees and provide for no further increases in permanent employment in fiscal year 1959. Although no increase in staff is requested in fiscal year 1959, there will continue to be substantial increases in the workload of the Commission, both in the headquarters and the field in implementation of the Atomic Energy Act of 1954, as amended. These increases create a heavy demand on manpower. For example, the atoms for peace program, and the implementation of bilateral agreements with other countries entail a workload which continues to grow in complexity and volume. These expanding workloads have required and will continue to require frequent reappraisal and adjustment of the distribution and utilization of available manpower resources, consonant with programmatic trends.

Some of the specific areas in which progressively heavier workloads will fall on program direction and administration personnel and for which no additional personnel are provided in the estimates are:

(1) The increasing volume and variety of licenses to be processed with all of the attendant responsibilities vested under the law solely in the Commission

surrounding the issuance of licenses, distribution of source, special nuclear and byproduct material, inspection of licensed facilities, review and evaluation of health and safety aspects of proposed and existing nuclear facilities and development of related guides, standards, and criteria, etc.

(2) The expanding and maturing program of cooperation with other countries, involving the necessary liaison and personal contacts, distribution of source, special nuclear and byproduct material and issue of export licenses.

(3) Stepped-up interest of industry in the civilian applications of atomic energy which involves more on-site and off-site meetings and conferences with industry and State and local government representatives, the making of more information available to industry timely and in the most usable form, a continually increasing number of access permit holders requiring more and more time of administrative and technical staffs, more workload in developing and issuing policy guides and information on prices, charges, specifications, terms, and conditions for supplying source and special nuclear materials and services to industry, etc.

(4) The undertaking of an extensive program looking to a more widespread utilization of isotopes in various fields such as industrial operations, research, medicine, and agriculture.

In addition to the workload falling on personnel directly engaged in the activities outlined above and those administering the increasing weapons and reactor development programs, there will also be an impact on the overall workload of the supporting Commission staff.

Summary of estimates by category

Category	Actual, fiscal year 1957	Estimate, fiscal year 1958	Estimate, fiscal year 1959
1. Personal services	$30,102,238	$32,761,000	$34,143,000
2. Travel	1,968,606	2,464,000	2,620,000
3. Other objects	5,648,245	8,961,000	9,501,000
4. Equipment not included in construction projects	314,955	518,000	336,000
Total, program direction and administration	[1] 38,034,044	[1] 44,704,000	46,600,000

[1] Includes comparability in fiscal year 1957 and fiscal year 1958 for personnel budgeted in fiscal year 1959 under program direction and administration, previously budgeted under the reactor development and weapons programs. The amount of the comparability in fiscal year 1958 is $496,000.

JUSTIFICATION OF CATEGORIES

1. Personal services, $34,143,000

This budget provides for an average employment in fiscal year 1959 of 4,881 permanent full-time employees, plus a small number of professional and scientific consultants whose services are utilized for limited periods and a small number of employees in temporary positions to meet special situations. A breakdown of total personal services costs follows:

	Fiscal year 1957	Fiscal year 1958	Fiscal year 1959
(*a*) Net cost of permanent full-time employees, including terminal leave costs	$29,540,711	$31,797,000	$33,231,000
(*b*) Costs of other employees	162,120	347,000	324,000
(*c*) Regular pay in excess of 52 week base	0	122,000	128,000
(*d*) Payment above basic rates	376,430	462,000	445,000
(*e*) Reimbursements to other agencies	22,977	33,000	15,000
Total personal services	30,102,238	32,761,000	34,143,000

(a) Net cost of permanent full-time employees, including terminal leave costs

Fiscal year 1957	$29,540,711
Fiscal year 1958	31,797,000
Fiscal year 1959	33,231,000

The estimates provide for employment at the beginning and end of the fiscal year as follows:

	Fiscal year 1957	Fiscal year 1958	Fiscal year 1959
Starting employment	4,412	4,687	4,881
Ending employment	4,687	4,881	4,881
Computation of the dollar estimates:			
(1) Average employment	4,485	4,716	4,881
(2) Plus man-year equivalent for terminal-leave payments	28	34	34
(3) Total permanent man-years	4,513	4,750	4,915
(4) Average man-year cost	$6,546	$6,694	$6,761
(5) Net cost of permanent employees, including terminal leave costs (line (3) multiplied by line (4))	$29,540,711	$31,797,000	$33,231,000

The estimates are based on holding employment of permanent full-time employees in fiscal year 1959 to the level planned for attainment by June 30, 1958. As pointed out earlier in the justification, although no increase in staff is requested, there will continue to be substantial increases in the workload of the Commission.

The man-year equivalent for terminal leave payments covering estimated separations from Government employment is based on current experience.

The average permanent full-time man-year cost reflects an increase of $67 in fiscal year 1959, which is accounted for chiefly by the full year effect of higher in-hiring rates for physical science and engineer positions as provided under the Civil Service Commission Departmental Circular 793, automatic in-grade advancements, and the employment for a full year in fiscal year 1959 of personnel added in fiscal year 1958 at base rates higher than the average salary rate, such as AEC foreign scientific representatives and other scientific and technical personnel, including license inspectors.

The distribution of permanent full-time employees by office follows. The attempt to operate in fiscal year 1959 with no increase in staff will without question require redistribution of available manpower among the various offices which cannot be determined at this time.

Office	Actual, June 30, 1957	Estimate, June 30, 1958	Estimate, June 30, 1959
Grand Junction	155	127	127
Hanford	254	254	254
Oak Ridge	710	709	709
Savannah River	239	234	234
Albuquerque	769	803	803
San Francisco	157	159	159
Chicago [1]	365	338	338
Idaho	143	152	152
Pittsburgh	0	101	101
Schenectady	99	104	104
New York	165	205	205
Washington headquarters and extensions	1,631	1,695	1,695
Total	4,687	4,881	4,881

[1] Includes Lockland office, which is to be established July 1, 1958, as the Lockland Aircraft Reactors Operations Office.

(b) Costs of other employees

Fiscal year 1957	$162,120
Fiscal year 1958	347,000
Fiscal year 1959	324,000

These costs cover salaries of temporary, part-time, and intermittent employees. The bulk of these costs in fiscal year 1959 is for salaries of personnel occupying temporary clerical positions in connection with the Second International Conference on Atomic Energy at Geneva and personnel who are paid only when employed, such as members of the General Advisory Committee, the Patent Compensation Board, other boards, committees and panels, and other consultants and experts. The fiscal year 1959 estimate anticipates a reduction in the number of temporary employees required for the Second International Conference.

(c) Regular pay in excess of 52-week base

Fiscal year 1957	0
Fiscal year 1958	$122,000
Fiscal year 1959	128,000

These costs cover salaries for permanent employees for days of pay in excess of 260 days of pay in 1 fiscal year. One day of pay is involved in fiscal year 1959.

(d) Payment above basic rates

Fiscal year 1957	$376,430
Fiscal year 1958	462,000
Fiscal year 1959	445,000

These costs cover payments for scheduled and emergency overtime, nightwork differential, living and quarters allowance, and other authorized special allowances for AEC employees stationed overseas. A decrease of $17,000 is anticipated due to a more stabilized employment in fiscal year 1959.

(e) Reimbursements to other agencies

Fiscal year 1957	$22,977
Fiscal year 1958	33,000
Fiscal year 1959	15,000

These costs cover reimbursement to the Department of State for furnishing secretarial service at the Johannesburg, South Africa, office and reimbursement to other agencies for the services of functional specialists in connection with the Second International Conference on Atomic Energy at Geneva. The decrease in fiscal year 1959 is based on requirements for fewer specialists needed in connection with the Conference.

2. Travel

Fiscal year 1957	$1,968,606
Fiscal year 1958	2,464,000
Fiscal year 1959	2,620,000

This estimate covers the cost of domestic and foreign travel of program direction and administration personnel. The amount requested is based on the estimated requirements to discharge a satisfactory degree of technical and administrative supervision over Commission offices and projects and liaison with contractors; to carry out added responsibilities resulting from passage of the Atomic Energy Act of 1954, as amended, such as regulatory activities under the civilian application program and inspection of licensed facilities; to administer effectively the program of cooperation with other nations in the development of peaceful applications of atomic energy; to provide for attendance of technical and scientific personnel at important domestic and foreign conferences and symposia; and to provide for the necessary travel associated with the Second International Conference on Atomic Energy at Geneva.

A breakdown of the increase of $156,000 requested over fiscal year 1958 follows:

(a) Full year's travel requirements for personnel added in fiscal year 1958	$48,000
(b) Expanded program of inspection of licensed facilities	21,000
(c) Industrial participation activities	18,000
(d) Expanded weapons and reactor development program activities	31,000
(e) Travel in connection with international scientific and technical conferences, cooperation with other nations and overseas nuclear energy exhibits	38,000
Total increase	156,000

3. Other objects, $9,501,000

This estimate covers all costs of operations at the headquarters and in the field which are chargeable to program direction and administration except personal services, travel and equipment. The chief items included are transportation of things, communications, rents, utilities, printing and reproduction, various contractual services, maintenance and operation of buildings and grounds, sup-

plies and materials, and contributions to the civil service retirement fund. Amounts on a 3-year basis are:

	Fiscal year 1957	Fiscal year 1958	Fiscal year 1959
Field offices	$3,480,001	$4,760,000	$4,915,000
Headquarters and extentions	2,168,244	4,201,000	4,586,000
Total	5,648,245	8,961,000	9,501,000

The major portion of the increase of $3,312,755 in fiscal year 1958 over fiscal year 1957 is due to the inclusion in fiscal year 1958 of amounts for civil service retirement contributions and the maintenance of headquarters building and grounds, which were not charged to AEC appropriations in fiscal year 1957. The following table shows an analysis of the increase:

Increases in fiscal year 1958 over fiscal year 1957

	Total	Field offices	Headquarters and extensions
1. Civil service retirement contributions, previously charged to the Civil Service Commission appropriation	$1,981,000	$1,241,000	$740,000
2. Maintenance and operation of headquarters building and grounds, previously charged to General Services Administration appropriation	351,000	0	351,000
3. Nonrecurring costs of move to Germantown	355,000	0	355,000
4. Increase in costs due to Germantown location	240,000	0	240,000
5. Commuting transportation under provisions of Public Law 85-162	75,000	0	75,000
6. Other increases related to additional employment, shipments of household goods to foreign offices, etc	310,755	38,999	271,756
Total increase	3,312,755	1,279,999	2,032,756

The net increases in the total from fiscal year 1958 to fiscal year 1959 of $540,000 is due to the requirements for a full year's operation of the Germantown headquarters and increases related to higher average employment. The details of the net increase in fiscal year 1959 over fiscal year 1958 are as follows:

Increases in fiscal year 1959 over fiscal year 1958

	Total	Field offices	Headquarters and extensions
1. Increase for full year's maintenance and operation of the Germantown headquarters and grounds, as compared to to a half year in 1958 and the operation of an additional wing for a part of the year	$400,000	0	$400,000
2. Increase in costs for full year's operation, due to location at Germantown	97,000	0	97,000
3. Increase in costs for full year's operation of all foreign offices	25,000	0	25,000
4. Increase related to higher average employment	281,000	$155,000	126,000
5. Total increases	803,000	155,000	648,000
6. Decrease for nonrecurring costs of moving headquarters from Washington to Germantown	−263,000	0	−263,000
Net increase	540,000	155,000	385,000

The following statements give a comparison of costs in total and by activity for the 3 years for field offices and for the headquarters and extensions.

Field offices

Fiscal year 1957	$3,480,001
Fiscal year 1958	4,760,000
Fiscal year 1959	4,915,000

The fiscal year 1959 requirement for field offices is related directly to the average employment requested on the basis of actual experience. A breakdown by activity for the 3 years follows:

	Fiscal year 1957	Fiscal year 1958	Fiscal year 1959
Transportation of things, includes transportation of Government property and employees' household goods	$78,468	$80,000	$82,000
Communication services, includes costs of telephone service including equipment and teletype service	882,174	893,000	905,000
Rents and utilities, includes costs of rental of office and other administrative space and utilities	564,971	579,000	582,000
Printing and reproduction, includes charges for printing, binding, photostating and reproduction services	163,425	170,000	175,000
Other contractual services, covers costs of maintenance and operation of administrative buildings and equipment, contributions to Federal employees' life insurance fund, guard services, and various services performed by other agencies	1,448,996	1,424,000	1,424,000
Supplies and materials, includes costs of general office supplies, technical and professional books and gasoline, oil and parts for Commission-owned vehicles	319,290	351,000	360,000
Grants, subsidies and contributions, covers costs of civil-service retirement contributions	0	1,241,000	1,365,000
Refunds, awards, and indemnities, covers costs of employee awards given under the incentive awards program, and payments under Tort Claims Act	20,991	20,000	20,000
Taxes and assessments, includes costs of contributions under Federal Insurance Compensation Act	1,686	2,000	2,000
Total field offices	3,480,001	4,760,000	4,915,000

Headquarters and extensions

Fiscal year 1957	$2,168,244
Fiscal year 1958	4,201,000
Fiscal year 1959	4,586,000

The basic building at Germantown was occupied in January 1958. Occupancy of the additional wing is scheduled for October 1958. Between these two dates it will be necessary to continue to house and service some 200 employees in Washington. A small office will be maintained on a permanent basis in the District of Columbia after the completion of the move to Germantown in October 1958. Occupancy of the Germantown headquarters will entail nonrecurring costs for moving the headquarters and shipment of household goods of employees who relocate their residences, maintenance, and operating costs not heretofore experienced in Washington, and increased recurring costs over the level required in a Washington location. In fiscal year 1959 increased costs will also be experienced for additional staff employed during fiscal year 1958 resulting in a greater average employment in fiscal year 1959, and costs of a full year's operation of foreign offices established during fiscal year 1958.

A breakdown by activity for the headquarters and extensions for the 3 years follows:

	Fiscal year 1957	Fiscal year 1958	Fiscal year 1959
Transportation of things—includes costs for shipments of supplies and materials, transportation of Government property in connection with occupancy of the Germantown headquarters, and shipment of household goods of employees, including relocation of employees related to move of the headquarters and shipments to and from foreign offices	$50,413	$209,000	$158,000
Communications services—covers costs of telephone service including equipment and circuit rental, installation costs at Germantown, long-distance toll calls and tie-line services; and teletype service	635,685	978,000	1,065,000
Rents and utilities—includes costs of electric power, water and sewage charges at Germantown and rental of specialized equipment	8,614	54,000	140,000
Printing and reproduction—includes costs of printing forms, letterheads, routine reports, etc.; special printing and duplicating services performed by other agencies; and contractual duplicating services for press releases and information material	312,920	360,000	370,000
Other contractual services—includes operation and maintenance of building and grounds, guard services, and motor transportation services provided by General Services Administration; administrative support furnished by Department of State for foreign offices; and other miscellaneous services performed by other agencies; services contracted for, such as repairs and maintenance of equipment; reporting services for conferences and hearings; and official entertainment both at headquarters and field offices	904,823	1,480,000	1,745,000
Supplies and materials—includes costs of general office supplies, technical and professional books, gasoline, oil and parts for Commission-owned vehicles, and commission wide subscriptions for newspapers and periodicals	231,825	280,000	283,000
Grants, subsidies, and contributions—includes costs of contributions to the civil-service retirement fund and in fiscal year 1958 only, commuting transportation for employees under authority contained in Public Law 85-162	0	815,000	788,000
Refunds, awards and indemnities—includes cost of employee incentive awards program, and payments under Tort Claims Act	22,336	23,000	35,000
Taxes and assessments—includes costs of contributions under Federal Insurance Contributions Act	1,628	2,000	2,000
Total, headquarters and extensions	2,168,244	4,201,000	4,586,000

4. Equipment not included in construction projects

Fiscal year 1957	$314,955
Fiscal year 1958	518,000
Fiscal year 1959	336,000

The estimate is almost wholly for replacement of administrative equipment such as office machines and furniture, motor vehicles and operating equipment required by headquarters and field offices. Requirements in fiscal year 1959 are estimated to be somewhat lower than in fiscal year 1958 because unusual costs were experienced in fiscal year 1958 for reproduction, library, and other special equipment for the Germantown headquarters and for additional equipment required for personnel added in the headquarters and field offices.

The amount estimated for fiscal year 1959 is broken down as follows:

Washington headquarters	$186,000
Field offices	150,000
Total	336,000

Mr. RABAUT. The 1958 appropriation was $44,704,000, and the 1959 request is $46,600,000, an increase—we are back in the groove again—of $1,896,000.

FOREIGN OFFICES

Last year the committee had some comments in the report concerning additional field offices. On page 189 you make reference to

full year costs in 1959 for additional foreign offices established during 1958. How many have you opened, and where, and how many employees are in each?

Mr. FLOBERG. Dr. Vander Weyden will try to answer that question.

Dr. VANDER WEYDEN. We have opened 2 offices, Mr. Rabaut, 1 in Buenos Aires and 1 in Tokyo. In each case they have a scientific representative, staff assistant, and a secretary.

Mr. RABAUT. Three people.

Mr. MCCARTHY. In each of the five offices.

Dr. VANDER WEYDEN. A total of five offices now. Two new ones were just opened.

Mr. RABAUT. How many people in each office, in numbers? Five? Four?

Dr. VANDER WEYDEN. The total number is 19.

Mr. RABAUT. What are you doing with them?

Mr. MCCARTHY. Mr. Chairman, last year when we testified before the committee, the planned program called for nine offices. Five have been opened and at this moment we do not propose to increase that number.

Mr. RABAUT. You mean you will not open the other four? I am glad to get that on the record.

Mr. MCCARTHY. Not at this time.

Mr. RABAUT. Oh, not at this time.

Mr. MCCARTHY. If the need arises, but only the five are budgeted for in 1959.

Mr. RABAUT. Now name the 5 places where the 5 offices are.

Dr. VANDER WEYDEN. One we have had for a number of years is at Chalk River, the Canadian atomic-energy project; one is in London, and one in Paris. Then we have the two that I mentioned before, in Buenos Aires and Tokyo.

I would like to mention that we probably will transfer the Paris office to wherever Euratom locates its headquarters, which may be in Brussels. This could take place in 1959.

Mr. RABAUT. This item is increased, as I understand it, because of the fact that the offices were established last year on a partial-year basis, and this takes them on for the full year.

Mr. MCCARTHY. That is correct, sir.

GERMANTOWN HEADQUARTERS

Mr. RABAUT. What do you estimate the total additional annual cost of operating the new Germantown headquarters to be over and above the cost when you were in town?

Mr. MCCARTHY. I believe Mr. Derry can answer that.

Mr. RABAUT. I know that old saw, it's hard to keep them back on the farm, but this is in reverse. I want to know about that.

Mr. DERRY. Mr. Chairman, I do not think I can give you an answer to that.

Mr. RABAUT. You study it and put it in the record.

Mr. DERRY. All right, sir. It is an entirely different way of operation. You see, we are budgeting for the operation of the headquarters out in Germantown, whereas in town were paying rent and GSA was budgeting it and paying for the operation. I can give you an estimate.

Mr. RABAUT. Fine. Put it in the record, and tell us about the bus travel and all that which goes with the new job, and what it is costing.

We have to find out something about the cost.

(The information requested follows:)

Estimates of a full year's cost to the Government based on current prices for maintenance and operation of building and grounds and major services for AEC operations in Washington, D. C., and Germantown, Md., are as follows:

1. Estimated costs for a full year in Washington prior to move to Germantown

(*a*) Maintenance and operating costs, 1717 H St., including rent paid to the owner (paid by GSA)	$637,000
(*b*) Maintenance and operating costs, 1901 Constitution Ave. (paid by GSA)	118,000
(*c*) Transportation (reimbursement to GSA for shuttle service)	5,000
(*d*) Communications services, excluding special tie lines to field and postage	406,000
Total	1,166,000

2. Estimated costs for a full year at Germantown after the additional wing is occupied

(*a*) Maintenance and operations at Germantown (reimbursements to GSA for heat, janitor, and other building and grounds services)	$681,000
(*b*) Maintenance and operation, District of Columbia office, including rent paid to the owner (paid by GSA)	130,000
(*c*) Utilities at Germantown (electricity, water, and sewerage)	152,000
(d) Transportation (shuttle bus contract and reimbursements to GSA for motor-pool vehicles)	96,000
(*e*) Communications services, excluding special tie lines to field and postage	696,000
Total	1,755,000

The estimated cost of $210,000 for interim commuting transportation for the period January 1958 through June 30, 1959, for employees as authorized by Public Law 85–162 is excluded from the foregoing estimates.

TRANSFER OF EMPLOYEES BETWEEN PROGRAMS

Mr. RABAUT. The footnote on page 180 indicates that you have picked up some employees, $496,000 worth, who were previously charged to the reactor and weapons program. How many exchanges have been made the other way from overhead to program in the last year?

Mr. MCCARTHY. There are no transfers the other way, Mr. Rabaut.

Mr. RABAUT. Who got all this $496,000?

Mr. MCCARTHY. The weapons program was one of the main ones.

Mr. RABAUT. Do you mean to say you are not putting any of these fellows back in there as administrative people?

Mr. MCCARTHY. No. The main ones were at Albuquerque. The question was whether they were overhead employees or whether they were more properly chargeable to a program. It was a redistribution of the same number of people.

Mr. JENSEN. What is an overhead employee?

Mr. MCCARTHY. The overhead employee is what we call program direction and administration, that is, working on Commission policy or contract negotiations. The other type is the person working directly in the program.

Mr. RABAUT. How many others charged to the cost under the separate program are actually doing the administrative work and how do you differentiate between the two?

Mr. McCarthy. The way we differentiate between the two, Mr. Chairman, is that the great part of the Commission's program is carried out by contractors. If these people are doing work similar to what a contractor might do, for instance, guards or the security shipment people they are charged to the program.

In the weapons program we have a large number of guards and security shipment people. These are charged directly to the program rather than as overhead. The overhead people are our headquarters staff doing policy, contracts, operating for the Commission.

Mr. Rabaut. I want to say the Commission is quite fortunate in their budget officer.

Mr. McCarthy. Thank you, Mr. Chairman.

Security Investigations Program

Mr. Rabaut. The security investigations program. Insert pages 192 through 195.

(The pages referred to follow:)

Security Investigations Program

Program statement

Fiscal year 1958	$7,374,000
Fiscal year 1959	6,242,000
Decrease	1,132,000

This program includes cost of security investigation of individuals for whom clearance is required by the Atomic Energy Act of 1954, as amended. Cost of investigations for employees of access-permit holders for whom security clearance is required under the civilian application program is excluded. This is budgeted under "Other costs."

The Atomic Energy Act of 1954, as amended, provides that no individual shall be permitted access to restricted data until the United States Civil Service Commission or, under certain conditions, the Federal Bureau of Investigation shall have made an investigation and report to AEC on the character, associations, and loyalty of the person concerned and the AEC shall have determined that permitting such individual access to restricted data will not endanger the common defense and security. Published policies and procedures provide guidance in determining need for AEC security clearance.

Pursuant to provisions of section 145 (e) of the Atomic Energy Act, as amended, distribution of total investigative caseload between the Civil Service Commission and the Federal Bureau of Investigation is based on Commission-approved criteria. Requests for investigation for individuals who are to occupy positions of a high degree of importance or sensitivity are referred to the Federal Bureau of Investigation; all others to the Civil Service Commission.

The Commission-approved program for selective reinvestigation of previously cleared personnel continues in order to assure that the program is protected from individuals whose clearance eligibility may have changed since time of last clearance action in their cases.

Clearance needs of AEC contractors account for about 80 percent of the 23,100 "Q" type investigations budgeted for fiscal year 1959. Clearances of AEC personnel represent 6 percent of the total requirement, reinvestigations of persons previously cleared 5 percent and clearances of others, including suppliers and employees of other Government agencies, amount to 9 percent.

The following table shows the number of cases in process at the end of the previous year, the estimated number of new cases to be referred to the investigating agencies, and the estimated number of cases completed for both full background investigations (Q clearance) and national agency checks (L clearance). Costs are expressed in the number of completed units of investigation multiplied by the unit cost per investigation. Unit costs are supplied by the investigating agencies and include increases in fiscal year 1958 and fiscal year 1959 resulting from Public Law 854 requiring agency contributions to the civil service retirement fund.

Summary of estimates

	Actual, fiscal year 1957		Estimate, fiscal year 1958		Estimate, fiscal year 1959	
	Q clearances	L clearances	Q clearances	L clearances	Q clearances	L clearances
1. Number of cases pending in investigating agency at beginning of the year:						
Federal Bureau of Investigation	846	----------	657	----------	600	----------
Civil Service Commission	5,251	97	4,233	300	2,400	300
Total	6,097	97	4,890	300	3,000	300
2. Number of new cases referred to investigating agency:						
Federal Bureau of Investigation	8,200	----------	7,500	----------	5,500	----------
Civil Service Commission	26,085	6,778	17,500	6,600	17,600	6,500
Total	34,285	6,778	25,000	6,600	23,100	6,500
3. Number of cases completed by:						
Federal Bureau of Investigation	8,389	----------	7,557	----------	5,500	----------
Civil Service Commission	27,103	6,474	19,333	6,600	17,600	6,500
	35,492	6,474	26,890	6,600	23,100	6,500
4. Cost of investigations completed by FBI:						
Number completed	8,389	----------	7,557	----------	5,500	----------
Cost per case	$236.33	----------	$248.33	----------	$248.33	----------
Total cost, FBI	$1,982,573	----------	$1,876,630	----------	$1,365,816	----------
5. Cost of investigations completed by CSC:						
Number completed	27,103	6,474	19,333	6,600	17,600	6,500
Cost per case	[1] $238.78	$5.05	[1] $290.00	$5.57	$275.00	$5.57
Total cost, CSC	$6,471,710	$32,694	$5,606,570	$36,762	$4,840,000	$36,184
6. Total cost of completed cases	$8,486,977		$7,519,962		$6,242,000	
7. Adjustment for partially completed cases at year end	−44,890		−145,962		0	
8. Total security investigations program	8,442,087		7,374,000		6,242,000	

[1] Average cost.

JUSTIFICATION OF ESTIMATES

The estimated number of cases to be referred for full field investigation (item 2 of the preceding table) is summarized below:

Full field investigations (Q clearance)

Category	Fiscal year 1957, actual	Fiscal year 1958, estimated	Fiscal year 1959, estimated
AEC	2,914	1,600	1,500
Contractor:			
Construction	2,388	2,600	2,100
Operating	24,195	16,400	16,400
All others	2,315	2,647	2,000
Reinvestigations	2,473	1,753	1,100
Total	34,285	25,000	23,100

Mr. RABAUT. I note that the 1958 appropriation was $7,374,000. The 1959 request is $6,242,000, or a decrease of $1,132,000. No questions.

OTHER COSTS AND RELATED REVENUES

Mr. RABAUT. Other costs and related revenues. We will insert pages 196 through 207.

(The pages referred to follow:)

OTHER COSTS

Program statement

Estimate, fiscal year 1959	$6,687,000
Estimate, fiscal year 1958	7,298,000
Decrease	611,000

Under the program "Other costs" the Commission budgets for certain costs incurred in the manufacture of materials, which it sells to eligible purchasers, and in rendering laboratory, research, and other services to industrial and research organizations through the industrial participation program. Commission policy provides for full cost recovery for products and services with the exception of the security investigations program, which provides the first 25 investigations free of charge to access-permit holders, and discounts on isotopes used for medical and agricultural research, and other minor exceptions approved by the Commission. Reimbursements received by the Commission for the cost of products and services are applied to reduce the Commission's fund requirements. They constitute an offset against "Other costs" and are shown under the program "Revenues applied." The decrease in estimated cost for fiscal year 1959 is principally related to a decreased level of sales of heavy water and other products, and a decrease in the level of security investigations for access-permit holders. These decreases are partially offset by an increased sales level in the isotopes program and by increased use of AEC-owned facilities and equipment and other services.

Summary of estimates by category

	Actual, fiscal year 1957	Estimate, fiscal year 1958	Estimate, fiscal year 1959
1. Other costs:			
(a) Cost of special reactor materials sold	$3,278,035	$3,089,000	$2,388,000
(b) Cost of isotopes	1,402,979	2,089,000	2,286,000
(c) Cost of other products	36,601	300,000	45,000
(d) Cost of services	850,133	1,133,000	1,445,000
(1) Use of AEC facilities and equipment	213,816	185,000	270,000
(2) Irradiation services	235,329	570,000	800,000
(3) Special processing, fabrication, separation, and recovery of material	119,433	165,000	175,000
(4) Other services	281,555	213,000	400,000
(e) Security investigations	1,051,855	687,000	523,000
Total, other costs	6,619,603	7,298,000	6,687,000
2. Related revenue included under program "Revenues applied"	10,901,126	10,886,000	9,982,000
3. Excess of revenue over costs	4,281,523	3,588,000	3,295,000

JUSTIFICATION OF CATEGORIES

1. (a) Cost of special reactor materials, $2,388,000.—Includes cost of heavy water sales, principally to foreign countries and cost of boron 10 to domestic users. Decrease of $701,000 in fiscal year 1959 from fiscal year 1958 estimate is due to a reduction in sales of heavy water. Related revenue in amount of $4,444,000 is included under program "Revenues applied."

(b) Cost of isotopes sold, $2,286,000.—Includes cost of isotopes produced for sale or lease to research laboratories, industry, and educational institutions.

The increase of $197,000 from the fiscal year 1958 estimate is related to increased sales of isotopes in fiscal year 1959. Related revenue in amount of $3,406,000 is included under program "Revenues applied."

(c) *Cost of other products, $45,000.*—Includes cost of miscellaneous products produced for sale. The decrease of $255,000 from fiscal year 1958 is due principally to inclusion of cost of sales of nickel scrap in fiscal year 1958, not anticipated for fiscal year 1959. Related revenue in amount of $51,000 is included under program "Revenues applied."

(d) *Cost of services, $1,445,000.*—Includes cost of irradiation services, use of AEC facilities and equipment, special processing and fabrication, separation, and recovery of material and other services principally related to research studies. Commission policy provides for cooperation in providing research services in the industrial participation program. The increase of $312,000 from the fiscal year 1958 estimate is attributable mainly to increased use by industry of AEC facilities and equipment, irradiation services, and other services. Related revenue in amount of $1,801,000 is included under program "Revenues applied."

(e) *Cost of security investigations, $523,000.*—Includes cost of security investigations obtained for access-permit holders. As a means of encouraging American industry to participate more fully in the Atomic Energy program, the Commission initiated a program for release of selected classified nonmilitary information, after obtaining the necessary security clearances, to applicants who can demonstrate the information is needed in their business or profession. Each access-permit holder is provided with the first 25 investigations free of charge. It is estimated that 1,850 limited security clearances and 1,865 full field investigations will be completed during fiscal year 1959 at a total cost of $523,000, and the Commission will accrue approximately $280,000 in revenue from such security investigations. It is estimated that approximately 45 percent of the security investigations for fiscal year 1959 will be accomplished without charge, based on current Commission policy. Estimated revenue is included under the program "Revenues applied" and serves to reduce the appropriation requirements of the Commission.

2. Related revenue included under program "Revenues applied", $9,982,000

The estimated total revenue related to the sale of products and services included in the program "Other costs" is $9,982,000 as compared to the cost of the related products and services of $6,687,000 reflecting an excess of revenue over cost of $3,295,000 on the products and services included in this program.

Revenues Applied

Program statement

Estimate fiscal year 1959	$27,720,000
Estimate fiscal year 1958	30,502,000
Decrease	2,782,000

The program "Revenues applied" includes the income from sales and lease of products and services to eligible purchasers and other revenues from community operations, tuition income, hospitals, and other miscellaneous sources, such as income from royalties and collateral funds. The program "Revenues applied" is presented in two categories on the following schedule of summary of estimates by category. The first category, "Revenue from sale of products and services" consists of items for which the related costs are included under the program "Other costs" and the second category, "Other revenue," consists of revenue items for which the costs are reflected under the related program cost, and miscellaneous income such as royalty income, and other items of a miscellaneous nature.

"Revenue from sale of products and services" includes income from sale of special reactor materials, other special material, isotopes, and income from use of AEC-owned facilities, irradiation services, processing and fabrication, other miscellaneous services, and income from security investigations. Commission policy provides for full cost recovery for products and services, with the exception of the security investigations program, which provides for the first 25 investigations free of charge, and discounts on isotopes used for medical and agricultural research, and other minor exceptions approved by the Commission.

The revenues received by the Commission from the sale of products and services, and miscellaneous revenue, are applied in the budget to reduce the appropriation requirements of the Commission.

The principal reasons for the decrease in revenues of $2,782,000 are a decrease in the sales level of heavy water to foreign countries and a decrease in revenue from Community operations, due to disposal of housing and commercial properties at Oak Ridge, Tenn., and Richland, Wash. These decreases are partially offset by increases in revenues mainly from the sale of isotopes, increased use of AEC facilities and equipment, sale and lease of source and special nuclear material, charges for special nuclear material consumed and sale of steam.

Summary of estimates by category

	Actual, fiscal year 1957	Estimate, fiscal year 1958	Estimate, fiscal year 1959
A. Revenue from sale of products and services (related costs are included under program "Other costs"):			
1. Sale of special reactor materials	$5,245,145	$5,686,000	$4,444,000
2. Sale and lease of isotopes	3,189,712	3,117,000	3,406,000
3. Sale of other products	41,577	357,000	51,000
4. Income from use of AEC-owned facilities and equipment	344,823	265,000	400,000
5. Income from irradiation services	283,758	660,000	700,000
6. Income from special processing and fabrication and separation and recovery	192,845	249,000	261,000
7. Income from other services	298,874	230,000	440,000
8. Income from security investigations	1,304,392	322,000	280,000
Total revenue from sale of products and services	10,901,126	10,886,000	9,982,000
B. Other revenues (related costs are included when applicable under program costs of current or prior years):			
1. Sale of source and special nuclear material	2,151,857	1,300,000	1,393,000
2. Lease of source and special nuclear materials	237,751	316,000	1,003,000
3. Income from charges for special nuclear material consumed	10,360	274,000	624,000
4. Income from sale of steam	0	300,000	1,200,000
5. Income from research hospitals	352,797	300,000	300,000
6. Income from schools of reactor technology	403,096	328,000	280,000
7. Income from sale of publications, museums, and other fees	60,414	76,000	60,000
8. Income from community operations	18,987,959	15,243,000	11,473,000
9. Income from collateral funds	507,144	579,000	505,000
10. Other miscellaneous income	961,355	900,000	900,000
Total other revenues	23,672,733	19,616,000	17,738,000
Total revenues applied	34,573,859	30,502,000	27,720,000

JUSTIFICATION OF CATEGORIES

A. Revenue from sale of products and services, $9,982,000

The gross revenue from the sale of products and services in this category for fiscal year 1959 in the amount of $9,982,000 is applied as a reduction of the total appropriation requirement of the Commission; however, it is pertinent to point out that the related costs of these products and services amount to $6,687,000, which is included as an appropriation requirement under the budget program "Other costs." The net revenue after deduction of costs is $3,295,000.

1. *Sale of special reactor materials, $4,444,000.*—Estimate consists principally of revenue from the sale of heavy water to foreign countries for reactor use, also includes domestic sale of minor quantities for research, and sale of minor quantities of boron 10. The decrease in revenues of $1,242,000 from the fiscal year 1958 estimate is attributable to a reduction in heavy water sales to foreign countries. The related cost of the material is $2,388,000.

2. *Sale and lease of isotopes, $3,406,000.*—Estimate includes revenue from the sale and lease of stable and radioisotopes to research laboratories, industry, and educational institutions. Recent price adjustments effective July 1, 1957, decreased the sales price of cobalt 60, based on cost studies, and the decreased competitive price is expected to increase usage in research and commercial application. The increase of $289,000 from the fiscal year 1958 estimate is based on increase sales of isotopes in fiscal year 1959. The related cost of the products is $2,286,000.

3. *Sale of other products, $51,000.*—Estimate includes revenue from the sale of miscellaneous products. The decrease in revenues of $306,000 from the fiscal year 1958 estimate is due to inclusion of revenues from nickel scrap sales in fiscal year 1958, not anticipated for fiscal year 1959. The related cost of the products is $45,000, which is included under the program "Other costs."

4. *Income from use of AEC-owned facilities and equipment, $400,000.*—Includes income principally derived from use of Commission laboratory facilities for research work. Commission policy provides for cooperation with industry in providing research services in the industrial participation program. The increase of $135,000 from the fiscal year 1958 estimate is based on increased use of facilities by industry. Cost of services included under program "Other costs" is estimated to be $270,000.

5. *Income from irradiation services, $700,000.*—Estimate derived principally from irradiation services for research and industrial application performed at the national reactor testing station. The increase of $40,000 from the fiscal year 1958 estimate is based on past experience which has indicated a steady growth in the number of experiments conducted since the start-up of the testing station. Related cost of services included under program "Other costs" is estimated to be $600,000.

6. *Income from special processing and fabrication and separation and recovery, $261,000.*—Estimate consists principally of revenues derived from special processing and fabrication services performed by the Oak Ridge office. The increase of $12,000 from the fiscal year 1958 estimate is related to anticipated additional requirements from both Government and private contractors for special uranium shapes. Related cost of services included under program "Other costs" is estimated to be $175,000.

7. *Income from other service, $440,000.*—Estimate consists principally of revenues derived from services related to use of Commission laboratory services and equipment. The increase of $210,000 from the fiscal year 1958 estimate is related to additional requirements for laboratory services by private agencies. Related cost of services included under program "Other costs" is estimated to be $400,000.

8. *Income from security investigations, $280,000.*—Includes income from authorized access-permit holders for the charges for security investigations. As a means of encouraging American industry to participate more fully in the atomic energy program, the Commission has instituted a program for release of selected classified nonmilitary information, after obtaining the necessary security clearances, to applicants who can demonstate the information is needed in their business or profession. Each access-permit holder is charged for clearance requests in excess of the first 25. The decrease in fiscal year 1959 revenue is attributable to the increasing number of new access permits with small groups of employees, resulting in a substantial increase in the percentage of security investigations provided without charge to the access-permit holders. It is estimated that approximately 45 percent of the requests for security investigations for fiscal year 1959 will be accomplished without charge, based on current Commission policy. The related cost for security investigations included under the program "Other costs" is $523,000.

B. Other revenues, $17,728,000

1. *Sale of source and special nuclear material, $1,393,000.*—Estimates includes revenue from sale of normal and enriched uranium to foreign countries, and domestic sale of normal and depleted uranium for industrial and research usage. Increase of $93,000 from the fiscal year 1958 estimate is based on additional sales to domestic sources. Related costs of the products were included in program costs in prior years.

2. *Lease of source and special nuclear materials, $1,003,000.*—Current Commission policy provides for the lease of materials to foreign countries and domestic users at a least charge of 4 percent per annum. In certain cases it is anticipated that material will be sold to foreign countries rather than leased. The estimate includes the following income:

(*a*) Domestic	$743,000
(*b*) Foreign	260,000
Total	1,003,0000

The revenue from domestic sources is principally related to lease of enriched materials for power reactors generating a revenue of approximately $507,000; materials leased for research and test reactors are estimated to provide a revenue of approximately $220,000, and additional revenue of approximately $16,000 is anticipated from the lease of normal uranium and plutonium for research purposes. It is not anticipated that the Commission will purchase any plutonium during fiscal year 1959 produced from leased materials or materials sold to

foreign countries. Estimates are subject to adjustment dependent upon accomplishment of program scheduling by users of material.

3. *Income from charges for special nuclear material consumed, $624,000.*—Estimate includes revenue for charges for material consumed in processing reactor fuel elements, and charges for material consumed in reactor operations by domestic, military, and foreign users. Current agreements with the Department of Defense provide that the Commission will be reimbursed for materials consumed in military reactors. The estimate includes the following revenues:

(*a*) Domestic	$276,000
(*b*) Military	282,000
(*c*) Foreign	66,000
Total	624,000

Due to limited experience in the field of licensee manufacture of fuel elements and reactor burnup of fuel, additional experience may require substantial change in the estimates for this category of revenue.

4. *Income from sale of steam, $1,200,000.*—Estimate consists of revenue from the sale of steam from the pressurized water reactor at Shippingport to the Duquesne Power & Light Co. and from the sodium reactor experiment (SRE) at Santa Susana, Calif., to the Southern California Edison Co. The increase of $900,000 from the fiscal year 1958 estimate is based on having both plants in operation for a full year in fiscal year 1959.

5. *Income from research hospitals, $300,000.*—Estimate includes income from patients at the Commission's research hospitals. Related cost for the operation of the hospitals is included under the biology and medicine program, together with the cost of operation of the Cancer Research Laboratories and related facilities.

6. *Income from schools of reactor technology, $280,000.*—Estimate includes revenue for tuition from students attending the Argonne International School of Nuclear Science and Engineering. The tuition charge for the International School of Nuclear Science and Engineering in 1959 is estimated at $2,000 for each student. The net decrease of $48,000 from the fiscal year 1958 estimate reflects a reduction of approximately $88,000 as the result of closing the Oak Ridge School of Reactor Technology which is partially offset by an anticipated increase of $40,000 in revenues from the Argonne school based on the addition of 2 courses, 1 for reactor supervisor and the other for reactor hazards evaluation. The related costs for the Argonne school are included under program costs.

7. *Income from museums, exhibits, and sale of publications, $60,000.*—Estimate includes income from the Oak Ridge Museum of Atomic Energy, sale of pamphlets to museum visitors, sale of classified technical publications to access permit holders, and sale of unclassified technical publications to the Department of Commerce for resale to the public. Related costs are included under program costs.

8. *Income from community operations, $11,473,000.*—Estimate includes the income from the AEC communities of Oak Ridge, Tenn.; Richland, Wash.; Los Alamos and Sandia, N. Mex., and Colorado communities. Aggregate income includes revenue from housing and commercial properties, including hospitals, income from municipal services, utility operations, and other miscellaneous sources. The community program schedules, included under the community program, reflect the revenue by community and category. Related costs of $15 million are included under program costs. The decrease in community revenue of $3,770,000 from the fiscal year 1958 estimate is due principally to the projected disposal of housing, commercial and utility properties at Oak Ridge, Tenn., and Richland, Wash.

9. *Income from collateral funds, $515,000.*—Estimate includes income from collateral funds held by contractors for insurance collateral, employee benefits and annuity funds. Decrease of $64,000 from the fiscal year 1958 estimate is due primarily to the recoupment of the Dupont insurance fund during fiscal year 1958.

10. *Other miscellaneous income, $900,000.*—Includes income from royalties, insurance indemnity fees and other miscellaneous sources of a general nature.

SOURCE OF REVENUES

Mr. RABAUT. Someone explain briefly the type of materials and services that you dispense which result in the revenues shown in the justifications.

Mr. MCCARTHY. The bulk of the revenues in here result from sales of heavy water, isotopes and other sales of products which we manufacture and which we sell to foreign countries or to industry. Income is also received from the use of AEC facilities for services we render, such as the radiation services at our engineering test reactor and our materials test reactor at Idaho.

We also receive income from security investigations where we incur the cost for access permittees.

Mr. RABAUT. Nothing has happened to the salesmanship ability in the Commission; has there?

Mr. MCCARTHY. No, sir.

Mr. RABAUT. I notice in 1957 they sold $10,901,126, they have an estimate for 1958 which is down just slightly, and for 1959 they have gone down to $9,982,000. I hope you are advising me correctly about the salesmanship of the Commission. You are pretty good when you are selling me.

Mr. MCCARTHY. One of the things that we have to gage is the sales of heavy water to foreign countries or to others. We expect the sales of heavy water will drop off some in 1959.

Mr. RABAUT. Is there a particular reason for the falloff in the sales of heavy water?

Dr. LIBBY. No, sir. I think this is a fluctuation.

Mr. RABAUT. I do not want a lot of detail on it.

Dr. LIBBY. This is a big management problem we have as to whether we build up an inventory of heavy water expecting sales, or not. We have decided to keep one plant in standby and the other to chug along with an inventory to see how the heavy water business is going. I believe it will go up.

Mr. JENSEN. Mr. Chairman, I wonder if we could have a short definition of heavy water. I think I know pretty well what it is.

Dr. LIBBY. Heavy water is water formed of oxygen and heavy hydrogen, D_2O, similar to ordinary water, but 1.1 times as heavy.

SELECTED RESOURCES

Mr. RABAUT. We shall go now to "Selected resources." We shall insert pages 208 through 217 in the record.

(The pages referred to follow:)

INCREASE OR DECREASE IN SELECTED RESOURCES

Program statement

Estimate, fiscal year 1959	$910,370,211
Estimate, fiscal year 1958	872,110,211
Increase	38,260,000

This program "Increase or decrease in selected resources" presents the net increase or decrease in levels of resources required to support the program requirements of the Commission. The program includes requirements for inventories, collateral funds and other deposits, and goods and services on order. The category "Goods and services on order" includes contracts for materials and serv-

ices to be delivered after fiscal year 1959 and financing of contractors in accordance with Commission policy beyond the end of the fiscal year to insure continuity of operations. The contractor prefinancing requirements are included in the estimate on the basis of 3 months prefinancing, in accordance with the change in policy reducing production contractor prefinancing from 6 months to 3 months. The levels of selected resources are assets that may be applied to program costs of future years' operations.

Appropriation requirements of $38,260,000 for fiscal year 1959 consist of $5,392,000 to finance increases in inventory levels and an increase of $32,868,000 in the level of goods and services on order.

Increase in inventory levels of $5,392,000 consists of an increase in special reactor materials inventory of $4,500,000 to fund an increased inventory level for stockpiling of materials, and an increase of $892,000 for isotopes inventory required to support increased research activity and provide higher inventory level of items for sale and lease to industrial and research users.

The increase in level of goods and services on order is related to program cost levels at the end of fiscal year 1959.

Summary of estimates by category

Balances at end of year	Actual 1957	Estimate 1958	Estimate 1959	Increase(+) or decrease(−)
1. Inventories:				
(a) Stores	$84,900,920	$87,236,000	$87,236,000	0
(b) Special reactor materials	54,164,980	72,171,000	76,671,000	$4,500,000
(c) Other special materials	18,572,603	18,220,000	18,220,000	0
(d) Isotopes	3,693,080	5,304,000	6,196,000	892,000
Total inventories	161,331,583	182,931,000	188,323,000	+5,392,000
2. Collateral funds and other deposits	24,099,000	20,346,000	20,346,000	0
3. Goods and services on order	600,787,407	668,833,211	701,701,211	32,868,000
Total unapplied resources at end of year	786,217,990	872,110,211	910,370,211	+38,260,000
Increase or decrease in selected resources	68,785,462	85,892,221	38,260,000	

JUSTIFICATION OF CATEGORIES

1. Inventories, increase, $5,392,000

(*a*) *Stores inventory, increase, none.*—Stores inventories are supplies, materials, and parts normally used or consumed in the production of source and special nuclear materials, in the maintenance of production plants, buildings, and other facilities, or in the operation of laboratories and experimental projects, towns and administrative activities. Stores exclude source and special nuclear materials, weapons components, special reactor materials, and other special materials.

No change is planned in the total level of stores inventory for fiscal year 1959. Increased stores requirement for the weapons and reactor development programs, related to increased cost levels of these programs, will be offset by decreases in contractor operating inventories in the special nuclear materials program.

(*b*) *Special reactor materials inventory, increase, $4,500,000.*—This inventory consists of selected materials used in the construction and operation of reactors for production and research purposes. The increase in fiscal year 1959 will provide for operational requirements and stockpiling of inventory of heavy water. Decrease in projected sales of heavy water partially accounts for inventory buildup.

A classified schedule of the inventory levels of special reactor materials is presented on classified page 218.

(*c*) *Other special materials, increase, none.*—Other special materials inventory is made up of the following items, requiring special accounting controls: Radium, gold, silver, platinum, rhodium, palladium, iridium, osmium, gallium and barrier items.

No change is planned in the total level of other special materials. The inventory level of material is related to program requirements.

(*d*) *Isotopes, increase, $892,000.*—Increase in the level of Isotopes Inventory is related to planned increases in production levels of stable and radiosotopes to provide isotopes for research programs requirements, and increased levels for lease and sale.

2. Collateral funds and other deposits, increase, none.

No change is planned in fiscal year 1959 for collateral funds and other deposits. The fiscal year 1959 year end balance includes $18,690,000 for collateral funds consisting of insurance collateral funds, employee benefit and annuity funds; and $1,656,000 in other deposits required by vendors on containers and other deposits of a miscellaneous nature. The collateral funds were established under contracts originally entered into by the War Department, and were designed to provide for various extraordinary contingencies in the activities of cost-type contractors. For the most part, collateral funds are held by trustees and invested in United States Government securities.

The following table indicates the balances of collateral funds and other deposits as of the end of fiscal years 1957, 1958 and 1959:

Collateral funds and other deposits balance at close of year	Actual fiscal year 1957	Estimate fiscal year 1958	Estimate fiscal year 1959
COLLATERAL FUNDS BY OFFICE AND CONTRACT			
Hanford, Wash.:			
General Electric insurance fund, Travelers Insurance Co	$10,500,000	$10,500,000	$10,500,000
I. E. Dupont insurance fund, Travelers Insurance Co	2,100,000	0	0
Albuquerque, N. Mex.: Los Alamos, University of California employees benefit fund	1,000,000	1,000,000	1,000,000
San Francisco, Calif.: Berkeley, University of California employees benefit fund	490,000	490,000	490,000
Chicago, Ill.: University of Chicago employees benefit fund	1,000,000	500,000	500,000
New York, N. Y.: Columbia University employees benefit fund	200,000	200,000	200,000
Washington, D. C.: University of California, Los Alamos, and University of Chicago insurance fund, Royal & Glove Co	6,000,000	6,000,000	6,000,000
Total collateral funds	21,290,000	18,690,000	18,690,000
Other deposits	2,809,000	1,656,000	1,656,000
Total collateral funds and other deposits	24,099,000	20,346,000	20,346,000

3. Goods and services on order, increase, $32,868,000

Estimates for fiscal year 1959 are based on Commission policy of 3 months forward financing for cost reimbursement type contractors and funding of commitment levels at the end of the contract period to insure continuity of operations. The funding requirements are related to the cost levels presented under program costs. The increase in the level of goods and services on order is related to (1) a higher level of weapons production: (2) higher operating levels of research and development for expanded reactor development and weapons programs; (3) new research and development contracts for the fuel cycle development program: and (4) increases for the cooperative arrangements program (civilian power reactors).

A summary table of requirements by category is included on the following page.

[In thousands]

Year-end balances, goods and services on order	Fiscal year 1957 actual	Fiscal year 1958 estimate	Fiscal year 1959 estimate	Increase or decrease
1. Major long-term reimbursement contracts (over $1,000,000 annual operating level):				
(a) Production of source and special nuclear materials	$236,223	$163,422	$162,459	−$963
(b) Production of weapons and weapon components	52,510	101,854	104,804	2,950
(c) Research and development	172,127	237,426	243,259	5,833
(d) Supporting services	10,015	11,135	16,760	5,625
Total	470,875	513,837	527,282	13,445
2. Major material procurement contracts	71,775	58,486	45,537	−12,949
3. Research and development contracts (other than those contracts included under item 1 (c))	21,335	29,729	57,934	28,205
4. Cooperative arrangements program (civilian power reactors)	5,306	38,105	47,230	9,125
5. Utilities	3,205	1,575	345	−1,230
6. All other	28,291	27,101	23,373	−3,728
Grand total	600,787	668,833	701,701	32,868

1. Major long-term reimbursement contracts (over $1 million annual operating level), increase, $13,445,000

The estimates provide forward financing of 3 months in addition to financing the level of outstanding commitments at the end of this period. Increases or decreases by category of contracts are listed below:

(*a*) *Production of source and special nuclear materials, decrease, $963,000.*—This decrease is related principally to a reduced level of operations in the Government-owned uranium concentrate processing plant at Monticello, Utah.

(*b*) *Production of weapons and weapons components, increase, $2,950,000.*—This increase is required for a higher level of weapons production.

(*c*) *Research and development, increase, $5,833,000.*—This increase includes $2.5 million to finance higher operating levels of research and development, principally for expanded reactor development and weapons programs and $3.3 million for Project Sherwood for contracts in the event of a breakthrough.

(*d*) *Supporting services, increase, $5,625,000.*—This increase is related to requirements for weapons test support.

2. Major material procurement contracts, decrease, $12,949,000

This decrease is related principally to reduction of cancellation liabilities on contracts for materials procurement, a reduction in the combined development agency assets liquidated against projected deliveries of raw materials and a reduction in working capital advances to Canadian mine operators.

3. Research and development, increase, $28,205,000

This increase is related principally to new research and development contracts for the fuel cycle program. The increase includes $12.5 million for contracts for test space in privately owned power reactors and $15 million for contracts for space in privately owned test reactors to test new types of fuel elements.

4. Cooperative arrangements program (civilian power reactors), increase, $9,125,000

The following table reflects the levels of uncosted balances at the end of the fiscal year under various contracts in the cooperative arrangements program for the advancement of civilian nuclear power:

Year-end balances

[In thousands]

	Fiscal year 1957	Fiscal year 1958	Fiscal year 1959	Increase or decrease (−) in fiscal year 1959
Carolinas-Virginia Nuclear Power Association, Inc.	0	$13,905	$12,905	−$1,000
Chugach Electric Association of Alaska	$1,503	3,809	8,464	4,655
City of Piqua, Ohio	0	3,318	3,318	0
Consumers Public Power District	0	8,000	8,000	0
East Central and Florida West Coast Nuclear Group	0	0	8,097	8,097
Elk River-Rural Cooperative Power Association	0	2,176	2,176	0
Northern States Power Co.	0	5,250	2,670	−2,580
Pennsylvania Power and Light Co	0	0	1,600	1,600
Yankee Atomic Electric Co	3,803	1,647	0	−1,647
Total	5,306	38,105	47,230	9,125

5. Utility contracts, decrease, $1,230,000

This decrease represents a reduction in the cancellation liability under the contract with the East Tennessee Natural Gas Co. for the supply of gas at Oak Ridge, Tenn.

6. All other, decrease, $3,728,000

This decrease represents a reduction in the level of AEC obligations for miscellaneous contracts. The decrease is due chiefly to the fact that there is no requirement in fiscal year 1959, as there was in fiscal year 1958, for certain obligations for the Geneva Conference and the completion of funding in fiscal year 1958 of two projects under the transient reactor test program (SPERT II and III).

27544—58——73

Mr. RABAUT. The 1958 appropriations were $872,110,211, and the estimates for 1959 are $910,370,211, an increase of $38,260,000.

PROJECT SHERWOOD

You show on page 215 an increase of $3.3 million for the Sherwood project. Explain this item, please.

Mr. MCCARTHY. We have gone through the Sherwood costs, Mr. Chairman, in discussing the reactor development program. There is also an increase of $3 million in the goods and services on order to obligate during 1959 in the event of a breakthrough in Sherwood.

Mr. RABAUT. What is that? In the event? I thought you referred to that as just a little incident. This language in the atomic energy program always confuses me.

(Off the record.)

Mr. MCCARTHY. This would provide a $3 million contingency fund for obligation in 1959 in the event there is a breakthrough in the Sherwood program.

Mr. RABAUT. We have to provide that much money just in case?

Mr. MCCARTHY. In the event this is not used, of course it would be available for obligation next year.

Mr. RABAUT. It is not a transferable fund?

Mr. MCCARTHY. It would carry over, sir, and would be reappropriated next year in the event it was not obligated.

Mr. RABAUT. You cannot transfer it to anything else?

Mr. MCCARTHY. No, sir.

Mr. RABAUT. Did you use any money like that this year?

Mr. MCCARTHY. No, sir.

Mr. RABAUT. That is a very good indication that you will not use it next year.

Mr. FLOBERG. This program is just getting underway, really. The chances of making some scientific progress in it are increasing every day.

PERSONNEL AND TRAVEL SUMMARIES

Mr. RABAUT. "Personnel and travel summaries." Insert pages 219 through 224 in the record.

(The pages referred to follow:)

All programs—AEC direct employment

	Actual, fiscal year 1957	Estimate, fiscal year 1958	Estimate, fiscal year 1959
Number of permanent civilian employees at end of fiscal year	6,757	6,961	7,062
Average number of permanent civilian employees	6,616	6,772	7,014
Man-year equivalent for terminal leave payments	44	50	47
Total man-years of full time employment	6,660	6,822	7,061
Personal services cost	$42,141,432	$44,855,000	$46,800,000

It is the basic policy of the Commission to conduct the atomic energy program through contractors to the greatest practical extent. The following functions are performed by AEC employees within this basic policy: (1) Program planning and direction, contract negotiation, liaison with contractors and inspection of contractor products, (2) administration of industrial development, licensing, and international cooperation activities, (3) security measures including screening

of personnel, protection of documents and property, guarding of security shipments and patrolling of sites where contractor guard service is not provided, (4) evaluation of domestic and foreign raw materials resources, (5) operation of storage sites, (6) operation of the New Brunswick Laboratory and New York Health and Safety Laboratory, (7) operation and management of the Los Alamos communications facilities, and fire and police departments, (8) operation of health and safety activities at the National Reactor Testing Station in Idaho, (9) accounting, auditing, property management, and personnel services, assuring adequate controls by AEC offices and contractors, (10) control and dissemination of scientific and technical information, and (11) provision of supporting services at the AEC headquarters and field offices.

The fiscal year 1959 estimate provides for an increase of 101 permanent full-time employees over the June 30, 1958, end strength of 6,961. Ninety-nine additional employees will be required for increased workload related to the expanding weapons production program and five additional employees will be needed for raw materials foreign resources evaluation activities. The increase will be offset by a reduction of three employees in the community program due to the community disposal program. With respect to personnel requested in fiscal year 1959 for program direction and administration, as was pointed out in the justification statement under that program, progressively heavier workloads are anticipated in a number of areas for which no additional personnel are provided in the estimates.

Average employment and year-end strengths for permanent full-time employees and total personal services costs for each of the Commission's programs are shown in the following table:

Program	Actual, fiscal year 1957			Estimate, fiscal year 1958			Estimate, fiscal year 1959		
	Employment		Costs (in thousands)	Employment		Costs (in thousands)	Employment		Costs (in thousands)
	Average full time	End strength		Average full time	End strength		Average full time	End strength	
Raw materials	329	230	$1,882	203	174	$1,368	177	179	$1,219
Special nuclear materials	194	188	1,203	185	201	1,194	201	201	1,314
Weapons	1,050	1,080	5,896	1,090	1,102	6,195	1,154	1,201	6,639
Reactor development	175	185	947	193	211	1,099	211	211	1,215
Biology and medicine	82	84	497	84	85	585	85	85	590
Training, education and information	173	179	873	177	182	912	182	182	940
Community	128	124	742	124	125	741	123	122	740
Program direction and administration	4,485	4,687	30,102	4,716	4,881	32,761	4,881	4,881	34,143
Total	6,616	6,757	42,142	6,772	6,961	44,855	7,014	7,062	46,800

All programs—travel

	Fiscal year 1957 actual	Fiscal year 1958 estimate	Fiscal year 1959 estimate
Estimated number of travel days	125, 432	136, 095	140, 720
Total estimated cost	$2, 922, 319	$3, 600, 000	$3, 850, 000

This estimate covers the cost of official travel of Commission employees while discharging assigned duties away from official duty stations. Some employees of the Commission spend the major part of their duty time away from their official station, such as shipment security guards in the special nuclear materials, weapons, and reactor development programs, and geologists and mining engineers in the raw materials program. Extensive travel is also required in connection with weapons production; quality assurance inspections and test and storage activities; inspection of licensed facilities; international cooperation activities; and the industrial development program. Substantial travel is also required to maintain a satisfactory degree of technical and administrative supervision over Commission offices and projects and liaison with contractors, and to provide for attendance of technical and scientific personnel at important domestic and foreign conferences and symposiums.

The fiscal year 1959 request represents the estimated requirements for travel essential to the proper discharge of Commission responsibilities in all areas. The estimate for the raw materials program is related directly to the scope of the domestic and foreign resource evaluation programs. The estimates for the special reactor materials and reactor development programs are geared to the volume of security shipments requiring escort personnel. The estimate for the weapons program is related to the projected level of operating costs in fiscal year 1959 which will necessitate a high volume of travel, especially in the quality assurance program and in providing escort personnel for security shipments. The travel requested under the biology and medicine program is for required travel of personnel assigned to the New York Health and Safety Laboratory. A small amount of travel funds is required under the training, education, and information program by the Technical Information Service Extension at Oak Ridge. Under the community program limited travel is performed by personnel engaged in community operations under the Oak Ridge, Hanford, and Albuquerque Operations Offices. The estimate for program direction and administration was discussed in the justification for operating costs of that program.

The following table reflects a comparison of the estimated days of travel and estimated costs of the various programs:

[Costs in thousands]

Program	Fiscal year 1957 actual		Fiscal year 1958 estimate		Fiscal year 1956 estimate	
	Days	Cost	Days	Cost	Days	Cost
Raw materials	31, 630	$292	18, 160	$229	14, 194	$200
Special nuclear materials	8, 357	179	10, 213	216	10, 875	230
Weapons	19, 052	394	28. 867	586	35. 081	689
Reactor development	2, 501	47	3, 108	56	3, 330	60
Biology and medicine	976	34	1, 028	38	1, 085	40
Training, education, and information	121	4	217	6	216	6
Community	108	3	151	5	151	5
Program direction and administration	62, 687	1, 969	74, 351	2, 464	75, 788	2, 620
Total	125, 432	2, 922	136, 095	3, 600	140, 720	3. 850

Statement on passenger carrying motor vehicles

	Actual, 1957	Estimate, 1958	Estimate, 1959
Net active fleet end of fiscal year	2, 195	2, 148	2, 148
Number of replacement vehicles	306	460	435
Gross cost of replacement vehicles	$892, 296	$2, 012, 771	$1, 131, 675

Passenger motor vehicles are required by the AEC for security patrols of extensive plant and laboratory areas, management and administration of AEC-owned communities, inspection and audit of Commission- and contractor-operated facilities, and for other necessary official transportation of AEC and contractor personnel within and between project sites and areas in the management and operation of the programs conducted by the agency.

Table A below shows the passenger motor vehicle requirements, by type, for fiscal year 1959. The estimate includes requirements for both contractor operations and the AEC. The motor vehicles requested are for replacement of vehicles that meet or exceed the GSA replacement standards. Steps have been taken to reduce the AEC fleet as shown in table B.

TABLE A.—*Passenger motor vehicles replacement requirements*

	Actual fiscal year 1957		Estimate fiscal year 1958		Estimate fiscal year 1959	
	Number	Cost	Number	Cost	Number	Cost
Automobiles	222	$315,588	349	$580,015	384	$655,400
Station wagons	47	98,132	42	90,256	20	42,675
Ambulances	4	19,361	8	33,550	8	45,350
Buses	33	459,215	61	1,308,950	23	388,250
Total replacements	306	892,296	460	2,012,771	435	1,131,675

TABLE B.—*Net active fleet of passenger motor vehicles at end of year*

	Actual fiscal year 1957	Estimate fiscal year 1958	Estimate fiscal year 1959
Automobiles	1,574	1,537	1,530
Station wagons	120	121	128
Ambulances	58	60	60
Buses	443	430	430
Total	2,195	2,148	2,148

The Atomic Energy Commission has an active program to promote more effective utilization of equipment, principally through increased use of AEC and GSA motor pools. This program, together with the completion of major construction, has resulted in some reduction in the total vehicle fleet, even though operating programs have continued to expand.

Mr. RABAUT. Have you any money in here which ought not to be in here?

Mr. MCCARTHY. No, sir. These two relate back to the language changes which we proposed.

TRAVEL

Mr. RABAUT. There is $500 per person for travel in the "Program direction and administration" item. You request $2,620,000 for 4,881 people.

Mr. MCCARTHY. Our total travel, which would be the limitation to be printed in the bill, is $3,850,000. There is a great deal of travel by our program direction and administration personnel. We have foreign travel where these people go over on missions to check various things. People travel in the research programs, making visits to the universities. Other of our headquarters people and our field people, of course, visit contractors.

Mr. RABAUT. I know there is a great deal of travel which is necessary. In the past we had a lot of abuse of the telephone. Anything

they did not want to write about they telephoned. Now we are dropping the telephone and saying, "Go and see the guy personally. He only lives in Japan," or wherever it might be, anyplace on the globe, "and you will be back in a couple of days." So we lose that time. I do not think about the trip but the time.

REACTOR PROGRAM

Mr. FENTON. How about this cooperative arrangement program? What are you doing about that?

Mr. FLOBERG. To what page do you refer, Dr. Fenton?

Mr. FENTON. Page 216.

Mr. FLOBERG. I think Dr. Davis could answer that most succinctly for you.

Mr. MCCARTHY. The money we have here, and to which I think Dr. Fenton is referring, is the cooperative arrangements money which we discussed the other day in the reactor-development program. You notice we have indicated the costs to be incurred. These, of course, are the balances which are the unpaid obligations at the end of 1959. This, coupled with the costs, provides the total funds for the cooperative arrangements.

Dr. Davis discussed these various contracts and their status the other day.

Mr. FENTON. What is the status of them now? I understand there is some confusion among the various private utilities. What is the story on that?

Mr. DAVIS. On which ones, Dr. Fenton?

PENNSYLVANIA POWER & LIGHT CO. REACTOR

Mr. FENTON. To be specific, the Pennsylvania Power & Light Co. Just what are they doing and what are you doing for them? What are they cooperating in?

Mr. DAVIS. The situation here is that we have before the Joint Committee a request for authorization of a cooperative project with the Pennsylvania Power & Light Co. and Westinghouse under which the Commission would support research and development on the slurry-type homogeneous reactors they propose. Ultimately they plan to build a plant of 70,000 to 150,000 kilowatts. This we would plan to move ahead on assuming that we get the proper authorization from the Joint Committee, but that has not yet been reported out, as I understand it.

Mr. FENTON. Is there some controversy about how far they are to go, what they are to participate in, how much they are to be granted, and all that sort of thing?

Mr. DAVIS. There was some discussion with the Joint Committee about how far we should go in contracting at this time, and the way it now lies before them is that we would contract for an initial phase which would cover research and development and would contemplate that at such time as this was successfully carried out, which would be within a couple of years, we hope; we would then enter into an additional contract to cover the later phases of the plan, which would include the construction by Pennsylvania Power & Light of the plant itself.

Mr. FENTON. All right, sir. I may take that up personally.
(Off the record.)

TUESDAY, JULY 8, 1958.

PLANT ACQUISITION AND CONSTRUCTION

Program and financing

	Total cost	Obligations			Appropriation required for fiscal year 1959
		1957 actual	1958 estimate	1959 estimate	
Program by activities:					
Facilities for:					
1. Raw materials	$13,293,000	$6,061,431	$1,117,000	----------	----------
2. Special nuclear materials	3,499,140,000	59,953,816	85,227,000	----------	----------
3. Weapons	389,747,000	62,316,658	61,006,098	----------	----------
4. Reactor development	613,432,000	102,378,116	175,643,000	$43,220,000	----------
5. Physical research	109,775,000	21,822,441	18,809,000	10,000,000	----------
6. Biology and medicine	18,417,000	1,076,501	1,254,000	----------	----------
7. Training, education, and information	2,500,000	----------	2,500,000	----------	----------
8. Communities	21,108,000	4,716,579	6,916,000	138,000	----------
9. Administration	14,978,000	1,351,065	4,150,000	----------	----------
Total program costs	4,682,390,000				
Total program (obligations)		259,676,607	356,622,098	53,358,000	
Financing:					
Unobligated balance brought forward		−375,810,475	−308,028,598	−65,287,000	
Recovery of prior year obligations		−45,094,730	−5,718,000	----------	
Unobligated balance carried forward		308,028,598	65,287,000	----------	
Unobligated balance transferred to schedule shown under the head "Proposed for later transmission" below		----------	----------	11,929,000	
New obligational authority		146,800,000	108,162,500	----------	----------
New obligational authority:					
Appropriation		158,300,000	108,162,500	----------	
Transferred to "Operating expenses," Atomic Energy Commission (70 Stat. 769)		−11,500,000	----------	----------	
Appropriation (adjusted)		146,800,000	108,162,500	----------	

Object classification

		1957 actual	1958 estimate	1959 estimate
	ATOMIC ENERGY COMMISSION			
03	Transportation of things	$153,790	$150,000	
04	Communication services	14,028	15,000	
07	Other contractual services	25,552,911	17,932,000	
	Services performed by other agencies	1,245,196	1,950,000	
08	Supplies and materials	97,185	100,000	
10	Lands and structures	221,889,284	326,834,769	$53,358,000
13	Refunds, awards, and indemnities	30,668	30,000	
	Total, Atomic Energy Commission	248,983,062	347,011,769	53,358,000
	ALLOCATION ACCOUNTS			
	Total number of permanent positions	23	13	
	Full-time equivalent of all other positions	11	4	
	Average number of all employees	28	15	
	Number of employees at end of year	8	0	
	Average GS grade and salary	6,8 $5,210	6,2 $4,892	
01	Personal services:			
	Permanent positions	$87,872	$52,498	
	Positions other than permanent	38,273	15,000	
	Other personal services	10,978	2,902	
	Total personal services	137,123	70,400	
02	Travel	9,908	4,600	
03	Transportation of things	2,091	4,200	
04	Communication services	638	400	
05	Rents and utility services	68,364	7,500	
06	Printing and reproduction	489	500	
07	Other contractual services	908,702	753,204	
08	Supplies and materials	4,421,412	6,870,100	
10	Lands and structures	5,144,690	1,895,267	
11	Grants, subsidies, and contributions		4,028	
15	Taxes and assessments	128	130	
	Total, allocation accounts	10,693,545	9,610,329	
	Total obligations	259,676,607	356,622,098	$53,358,000
	Obligations are distributed as follows:			
	Atomic Energy Commission	248,983,062	347,011,769	53,358,000
	Department of Commerce: Bureau of Public Roads	4,917,431	812,626	
	Department of the Interior: Bureau of Indian Affairs	23,280	22,508	
	Department of the Navy	29,310	530	
	Department of the Army	1,316,226	1,899,665	
	General Services Administration	4,402,762	6,875,000	
	Department of Health, Education, and Welfare: Public Health Service	4,536		

REVISED ESTIMATES

PLANT ACQUISITION AND CONSTRUCTION, ATOMIC ENERGY COMMISSION

Program and financing

	In budget	Revised estimate	Difference
Program by activities:			
Facilities for:			
1. Raw materials	----------	$300,000	$300,000
2. Special nuclear materials	----------	84,190,000	84,190,000
3. Weapons	----------	52,799,000	52,799,000
4. Reactor development	$43,220,000	208,722,000	165,502,000
5. Physical research	10,000,000	24,606,000	14,606,000
6. Biology and medicine	----------	2,200,000	2,200,000
7. Training, education and information	----------	5,100,000	5,100,000
8. Communities	138,000	2,050,000	1,912,000
9. Administrative	----------	400,000	400,000
Total program (obligations)	53,358,000	380,367,000	327,009,000
Financing:			
Unobligated balance brought forward	−65,287,000	−176,367,000	−111,080,000
Unobligated balance transferred to schedule shown under the head "Proposed for later transmission" below	11,929,000	----------	−11,929,000
Appropriation	----------	204,000,000	204,000,000

Obligations by object

	In budget	Revised estimate	Difference
10 Lands and structures	$53,358,000	$380,367,000	$327,009,000

Mr. CANNON. We will take up plant acquisition and construction. There has been a supplemental budget estimate of $204 million submitted for 1959. House Document No. 388 reads as follows:

Budget page	Heading	Original estimate	Change to—	Increase
121	Plant acquisition and construction (In lieu of the bracketed paragraph under this head insert the following:) For expenses of the Commission in connection with the purchase and construction of plant and other expenses incidental thereto necessary in carrying out the purposes of the Atomic Energy Act of 1954, as amended, including the acquisition or condemnation of any real property or any facility or for plant or facility acquisition, construction, or expansion; and hire of passenger motor vehicles; $204,000,000, to remain available until expended: *Provided, That, in the event that the Commission receives a satisfactory proposal for construction of a gas-cooled power reactor under an authorized cooperative arrangement with other persons, the amounts included in this appropriation for construction of such a reactor may be transferred to the appropriation for "Operating expenses", to the extent necessary to carry out such cooperative arrangement.*	0	$204,000,000	$204,000,000

This amendment is to provide the necessary funding to carry out the new construction projects for which appropriation would be authorized by H. R. 12459 and S. 3788, now under consideration in the Congress. Of the amount requested $120 million was anticipated in the January budget. Since that time, reconsideration of the program has indicated a need for an additional $84 million, principally for facilities to be used in the programs for which additional support is requested in the "Operating expenses" amendment. The funds requested

are in addition to unobligated balances estimated to be available to the Atomic Energy Commission in fiscal year 1959.

Mr. CANNON. We shall insert at this point pages 225 through 232. (The pages referred to follow:)

GENERAL STATEMENT FOR PLANT ACQUISITION AND CONSTRUCTION

Summary of requirement for fiscal year 1959

The budget estimates for the appropriation "Plant acquisition and construction" for the fiscal year 1959 provide for total obligations of $380,367,000, of which funds in the amount of $176,367,000 are presently available from prior-year appropriations, requiring a new appropriation of $204 million.

Of the total amount of funds presently available; namely, $176,367,000, $111,174,000 is required for prior-year projects which were not fully contracted for in fiscal year 1958. The remainder of the funds presently available, $65,193,000, is a net free unobligated balance resulting from the elimination, or deferment beyond fiscal year 1959, of projects or changes in the total estimated cost of projects for which funds were previously appropriated.

The prior-year projects which have not been fully contracted and for which $111,174,000 of funds presently available are carried forward for obligation in fiscal year 1959 are identified in section B under each program throughout this document. The newly authorized projects and residual funding of previously authorized projects requiring obligation of $269,193,000 in fiscal year 1959, which are to be funded by the new appropriation of $204 million and the $65,193,000 of funds presently available are identified in section A under each program throughout this document.

A summarization of the fiscal year 1959 obligations by program, showing the application of funds presently available and the derivation of the new appropriation requirement is shown on the following page.

Summary of obligations for fiscal year 1959 by program

Program	Fiscal year 1959 obligations		
	Sec. A (funding)	Sec. B (carryover)	Total
Raw materials	$300,000	0	$300,000
Special nuclear materials	34,800,000	$49,390,000	84,190,000
Weapons	44,900,000	7,899,000	52,799,000
Reactor development	159,737,000	48,985,000	208,722,000
Physical research	21,606,000	3,000,000	24,606,000
Biology and medicine	2,200,000	0	2,200,000
Training, education, and information	4,100,000	1,000,000	5,100,000
Community	1,150,000	900,000	2,050,000
Administrative	400,000	0	400,000
Total obligations	269,193,000	111,174,000	380,367,000
Unobligated balances brought forward	−65,193,000	−111,174,000	−176,367,000
Appropriation	204,000,000	0	204,000,000

Three-year summary of obligations and financing of obligations

The following tables summarize the total obligations incurred for each of the AEC's major construction programs for fiscal year 1957, fiscal year 1958, and fiscal year 1959, and the sources of funding these obligations:

Summary of obligations by program

Program	Actual, fiscal year 1957	Estimate, fiscal year 1958	Estimate, fiscal year 1959
Raw materials	$6,061,431	$902,000	$300,000
Special nuclear materials	59,953,816	45,540,000	84,190,000
Weapons	62,316,658	53,206,000	52,799,000
Reactor development	102,378,116	123,748,000	208,722,000
Physical research	21,822,441	15,886,000	24,606,000
Biology and medicine	1,076,501	1,272,000	2,200,000
Training, education, and information	0	2,000,000	5,100,000
Community	4,716,579	5,934,000	2,050,000
Administrative	1,351,065	4,330,000	400,000
Total obligations	259,676,607	252,818,000	380,367,000

Summary of financing

	Fiscal year 1957	Fiscal year 1958	Fiscal year 1959
Funds available:			
Unobligated balance at beginning of year	$375,810,475	$308,028,598	$176,367,000
Recovery of prior-year obligations	45,094,730	12,993,902	0
Appropriations	158,300,000	108,162,500	204,000,000
Transfer to "Operating expenses"	−11,500,000	0	0
Net amount available for obligations	567,705,205	429,185,000	380,367,000
Less unobligated balance at end of year	308,028,598	176,367,000	0
Obligations	259,676,607	252,818,000	380,367,000

Expenditures for plant acquisition and construction

Expenditures for plant acquisition and construction for fiscal year 1959 are estimated to be $240 million, an increase of $20 million over the estimate of $220 million in fiscal year 1958. Actual expenditures in fiscal year 1957 totaled $264,131,245. Unexpended balances are expected to decrease from $728,746,209, at the beginning of fiscal year 1957 to an estimated $436,388,465 at the end of fiscal year 1959 as shown in the following table which depicts the amounts available for expenditure and the expenditures for each year, and the unexpended balances at the end of each year.

	Actual, fiscal year 1957	Estimate, fiscal year 1958	Estimate, fiscal year 1959
Unexpended balance, beginning of year	$728,746,209	$584,225,965	$472,388,465
Appropriation	158,300,000	108,162,500	204,000,000
Transfer to operating expenses (deduct)	[1] 38,688,999	0	0
Total funds available	848,357,210	692,388,465	676,388,465
Less expenditures	264,131,245	220,000,000	240,000,000
Unexpended balance, end of year	584,225,965	472,388,465	436,388,465

[1] Includes $27,188,999 unpaid obligations as of June 30, 1956, for equipment not included in construction projects and $11,500,000 to finance contracts for procurement of feed materials from contractor-owned plants in lieu of construction of plants by the Government.

Highlights of construction programs

As shown in the table on page 226, estimates are presented for construction requirements for each of the AEC's functional programs. The highlights of the estimates for new projects and projects for which appropriation requests have been deferred until fiscal year 1959 are as follows:

1. *Raw materials.*—Obligations for raw materials facilities in fiscal year 1959 are estimated at $0.3 million to provide for minor modifications and improvements to existing plants or installations at Grand Junction, Colo., and Monticello, Utah.

2. *Special nuclear materials.*—Obligations for special nuclear materials facilities in fiscal year 1959 are estimated at $34.8 million to provide $10 million for plant modifications for processing of nonproduction spent fuels at various AEC sites; $11.9 million for reduction of fire hazards (phase II) at gaseous diffusion plants; $3.2 million for new waste storage installations at Arco, Idaho, and $9.7 million for improvements, modifications, and additions to existing plants to increase production, eliminate health and safety hazards, and reduce operating and maintenance costs.

3. *Weapons.*—Obligations for weapons facilities in fiscal year 1959 are estimated at $44.9 million to provide $31.8 million for additional production capacity and research and development facilities; $1.5 million for storage site modifications; $4.7 million for modifications and additions at weapons proving grounds; and $6.9 million for general plant projects related to the weapons program.

4. *Reactor development.*—Obligations for reactor development facilities in fiscal year 1959 are estimated at $159.7 million to provide $90.4 million for construction and modification of reactors and reactor experiments for the civilian power program, including $51 million for a gas-cooled power reactor; $41.4 million for construction related to military reactor and test projects; $7 million for construction related to control of thermonuclear energy for civilian power purposes; $10 million for additions to the fuel technology center and hot cells for laboratory tests; and $10.9 million for general plant projects and general support projects for the reactor development program.

5. *Physical research.*—Obligations for physical research facilities in fiscal year 1959 are estimated at $21.6 million to provide $12 million additional funds for the construction of a high energy accelerator on which design work was initiated at Argonne National Laboratory in fiscal year 1958; $7.1 million for completion of construction on the Princeton and Cambridge accelerators; $1 million for improvements to existing accelerators and a research reactor; and $1.5 million for general plant projects.

6. *Biology and medicine.*—Obligations for biology and medicine facilities in fiscal year 1959 are estimated at $2.2 million to provide $2 million for the construction of facilities for support of research dealing with radioactive fallout and related radiation hazards, and $0.2 million for general plant projects.

7. *Training, education and information.*—Obligations for training, education, and information facilities in fiscal year 1959 are estimated at $4.1 million to provide $0.5 million for additions to the regional nuclear training center in Puerto Rico; $2 million for research facilities for the International Atomic Energy Agency; and $1.6 million to provide a gamma process development irradiator for use in the program for developing widespread use of fission by-products in industry.

8. *Community.*—Obligations for community facilities in fiscal year 1959 are estimated at $1.1 million to provide $0.9 million for general plant projects at Oak Ridge, Hanford, Los Alamos, Sandia, and Grand Junction; $0.1 million for a school storage building at Hanford; and $0.1 million for an addiitonal water well at Los Alamos.

9. *Admiinstrative.*—Obligations for administrative facilities in fiscal year 1959 are estimated at $0.4 million for general plant projects.

PROPOSED LANGUAGE FOR THE PLANT ACQUISITION AND CONSTRUCTION APPROPRIATION FISCAL YEAR 1959

"For expenses of the Commission in connection with the purchase and construction of plant and other expenses incidental thereto necessary in carrying out the purposes of the Atomic Energy Act of 1954, as amended, including the acquisition or condemnation of any real property or any facility or for plant or facility acquisition, construction, or expansion; and hire of passenger motor vehicles; [$108,162,500] *$204 million,* to remain available until expended: *Provided, That, in the event that the Commission receives a satisfactory proposal for construction of a gas-cooled power reactor under an authorized cooperative arrangement with other persons, the amounts included in this appropriation for construction of such a reactor may be transferred to the appropriation for 'Operating expenses' to the extent necessary to carry out such cooperative arrangement.*" (42 U. S. C. 2011; 71 Stat. 403; Atomic Energy Commission Appropriation Act, 1958.) Appropriated 1958, $108,162,500; estimate 1959, $204,000,000.

EXPLANATION OF PROPOSED LANGUAGE CHANGES—PLANT ACQUISITION AND CONSTRUCTION

Proposed changes in language are indicated as follows: Language enclosed in brackets indicates proposed deletions, and italic indicates proposed insertion of new language.

1. [$108,162,500] *$204,000,000.*

The amount appropriated in fiscal year 1958 is deleted and the amount of the fiscal year 1959 appropriation request is inserted.

2. *: Provided, That, in the event that the Commission receives a satisfactory proposal for construction of a gas-cooled power reactor under an authorized cooperative arrangement with other persons, the amounts included in this appropriation for construction of such a reactor may be transferred to the appropriation for "Operating expenses" to the extent necessary to carry out such cooperative arrangement*

The estimates for fiscal year 1959 for "Plant acquisition and construction" include funds for the construction of a gas-cooled power reactor. However, the Commission is seeking industrial participation in design, construction, and operation of the reactor. If a satisfactory proposal is received, funds would not be required by AEC for construction, but would be required under the appropriation "Operating expenses" to provide for research and development which the Commission would undertake under the cooperative arrangement. In this event, the proposed language will provide the authority for the transfer of the necessary funds from the appropriation "Plant acquisition and construction" to the appropriation "Operating expenses." Authority for such alternate arrangements is contained in section 111 of the proposed authorization bill for fiscal year 1959 (H. R. 12459 and S. 3788).

Mr. CANNON. Mr. Commissioner, will you give us the highlights of this program for 1959, please?

Mr. FLOBERG. I have a prepared statement, Mr. Cannon, which I would like to read to the committee.

Mr. CANNON. If you will.

GENERAL STATEMENT

Mr. FLOBERG. Mr. Chairman and members of the committee, the appropriation requirement estimated for 1959 to carry out the plant acquisition and construction program of the Atomic Energy Commission is estimated at $204 million. This amount represents new funds required to meet projected obligational requirements of $380,367,000. The difference is met by carrying over unobligated balance of funds previously appropriated in the amount of $176,367,000.

Of the $380,367,000 of planned obligations in 1959, $111,174,000 represents obligations for projects which have been previously authorized and for which funds have been previously appropriated. The balance of our planned obligations, $269,193,000, will be for newly authorized projects and for projects previously authorized but only partially funded in prior years. It is to the major projects in this last group that these remarks are addressed.

Ninety-seven percent of the funds requested for new projects are to meet the needs of four of the Commission's programs: the special nuclear materials, weapons, reactor development, and the physical research programs. In the special nuclear materials program, 2 projects require the major portion of the $34.8 million estimated for that program. The first project estimated to cost $15 million, of which $10 million is planned for obligation in 1959, will provide for plant modifications necessary to give the Commission a capability for chemically processing spent fuel elements for the various nonproduction reactors that will come into being. The second project in the

amount of $11.9 million represents the second phase of alterations and modifications being made to the gaseous diffusion plants at Oak Ridge, Paducah, and Portsmouth in order to reduce the fire hazards attendant upon the operation of these particular facilities.

Of the $44.9 million obligations estimated for the weapons program, as in prior years, $10 million is earmarked for a project to enable the Commission to meet unforeseen facility requirements that may develop in the weapons production and research areas. Also included is a weapon fabrication plant at Oak Ridge in the amount of $8.8 million. This plant will enable us to exploit technological advances in weapons development. There are also included seven projects for the Los Alamos, Sandia, and Livermore laboratories, aggregating approximately $7.5 million, representing facilities required for the accomplishment of research and development programs at these locations. There are also funds provided in the estimates for various construction items of the weapons proving grounds and storage sites.

Our estimates project $159.7 million for new reactor development plant projects. Roughly one-third of this estimate, $51 million, is for the construction of a prototype gas-cooled graphite moderated civilian power reactor. This project results from the initiation of a broad program for the development of gas-cooled civilian power reactors. It should be noted, however, that before this reactor is constructed, industrial participation will be invited for private construction. In the event an acceptable proposal is received under this invitation, it is planned that the funds allowed for this project will be alternatively available under the operating expense appropriation to assist the proposer in research and development on this concept. Also in the civilian power field, the estimates include a project in the amount of $8 million for a heavy water component test reactor. This facility is required to do research and development necessary and prerequisite to the ultimate construction of a full-scale prototype, heavy water moderated power reactor. The estimates also provide $14,250,000 of additional funds for a fast power breeder pilot facility, usually referred to as EBR–II. The total cost of this project is $29.1 million, of which $14,850,000 has been previously appropriated. Yet another project in the civilian power field for which funds are being requested is the plutonium recycle test reactor, for which $10 million is included in the estimate. This project was authorized at $15 million in 1958 with funds appropriated in the amount of $5 million in that year.

In the military reactor program, the estimates include funding of $16.1 million, for a destroyer project. This project was authorized at $35 million in 1958 and funded in the amount of $3,880,000 in that year. The balance of funds (15 million) required to complete this project will be requested after 1959. The estimates also provide $19 million for test facilities required in the program for nuclear propulsion of missiles.

(Discussion off the record.)

The reactor development program estimates also include $5 million for additional hot cells and $5 million for an addition to the Fuels Technology Center at Argonne National Laboratory. These facilities are urgently required for the Commission to get on with its developmental responsibility in the field of nuclear fuels.

Of the $21.6 million of the planned obligation for the physical research program, $19 million is for accelerator construction. This amount includes $12 million for partial funding of the high energy accelerator at the Argonne National Laboratory, authorized at $27 million. $7.1 million represents the additional obligation required to complete the Harvard-MIT and the Princeton-Penn accelerators which are estimated to cost a total of $19.4 million.

Projects for the rest of the Commission's programs represent the remaining 3 percent of our new money request. Although not specifically mentioned, because they are not as large individually in terms of dollar requirements, they do nevertheless represent needed facilities to meet program objectives.

I would be happy to supplement the justifications submitted to you for any of the projects, should the committee require further detail.

UNOBLIGATED BALANCES

Mr. CANNON. Will you insert at this point in the record a tabulation showing your "net free" unobligated balances for each of the last 5 years, and your appropriations for each of the same years.

Mr. FLOBERG. Yes, sir.

(The information requested follows:)

Plant acquisition and construction appropriations

[In millions]

	Appropriation	Net free unobligated balances end of year
Fiscal year 1954	$166.0	$165.7
Fiscal year 1955	110.9	[1] 582.4
Fiscal year 1956	259.2	121.2
Fiscal year 1957	158.3	103.2
Fiscal year 1958	108.2	65.3

[1] Includes $571.4 million transferred to the operating expense appropriation.

COMPARISON OF GENERAL PLANT PROJECTS

Mr. CANNON. Mr. Commissioner, you have an item called "General plant projects" under most of the headings in this program. What do these items total, and how does this total amount compare with the total for the current fiscal year?

Mr. FLOBERG. I do not know if we struck a total on this.

Mr. CANNON. You may include that in the record.

Mr. FLOBERG. Thank you, sir.

(The information requested follows:)

General plant projects

Construction program	Fiscal year 1958 budget	Fiscal year 1959 budget
Raw materials	$450,000	$300,000
Special nuclear materials	10,000,000	9,365,000
Weapons	7,000,000	6,900,000
Reactor development	5,000,000	6,000,000
Physical research	1,300,000	1,500,000
Biology and medicine	966,000	200,000
Community	850,000	917,000
Administrative	450,000	420,000
Total	26,016,000	25,602,000

Mr. CANNON. How much of the 1958 funds for this purpose were found unobligated on June 30, 1958?

Mr. FLOBERG. It is $756,000.

RAW MATERIALS PROGRAM

Mr. CANNON. Passing on to the raw materials program, $300,000, we will insert page 233 at this point.

(The page referred to follows:)

RAW MATERIALS PROGRAM—CONSTRUCTION OBLIGATIONS

Program statement

Estimated obligations fiscal year 1959	$300,000
A—Obligations for new projects	(300,000)
B—Obligations for prior year projects	(0)
Estimated obligations fiscal year 1958	902,000
Actual obligations fiscal year 1957	6,061,431

Obligations for the raw materials program for fiscal year 1959 are estimated at $300,000, which amount is for a new project justified in section A below and authorized in the fiscal year 1959 authorization act:

SECTION A

The project in section A is:

Project No.	Title	Total estimated cost	Obligations funded through fiscal year 1958	Estimated obligations, fiscal year 1959	Funding required after fiscal year 1959 to complete project
59-i	General plants projects	$300,000	0	$300,000	0

EXPLANATION OF PROJECT IN SECTION A

1. Project 59–i. General plant projects, $300,000

This project is to provide for minor capital improvements, alterations, additions, engineering, retirements, and minor new construction required to maintain continuity of operation, improvement in production techniques, elimination of health and safety hazards, and reduction of operating and maintenance costs in Commission-owned raw-materials facilities.

SPECIAL NUCLEAR MATERIALS

Mr. CANNON. Then special nuclear materials, $34,800,000. We will insert at this point pages 234 through 238.

(The pages referred to follow:)

SPECIAL NUCLEAR MATERIALS PROGRAM—CONSTRUCTION OBLIGATIONS

Program statement

Estimated obligations, fiscal year 1959	$84,190,000
(*a*) Obligations for new projects	(34,800,000)
(*b*) Obligations for prior year projects	(49,390,000)
Estimated obligations, fiscal year 1958	45,540,000
Actual obligations, fiscal year 1957	59,953,816

Obligations for the special nuclear materials program for fiscal year 1959 are estimated at $84,190,000, of which $34,800,000 is for new projects justified in section A below which were authorized in the fiscal year 1959 Authorization Act, or were previously authorized and for which a request for appropriation was deferred until fiscal year 1959.

The balance of $49,390,000 is for projects listed under section B below which were authorized prior to fiscal year 1959 and for which funds have previously been appropriated but are now carried over into fiscal year 1959.

SECTION A

The projects comprising section A are as follows:

Project No.	Title	Total estimated cost	Funded through fiscal year 1958	Estimated obligations, fiscal year 1959	Funding required after fiscal year 1959 to complete project
59-a-1	Plant modifications for processing of nonproduction spent fuels, various AEC sites	$15,000,000	0	$10,000,000	$5,000,000
59-a-2	Pilot plant for fabrication of new fuel elements, Fernald, Ohio	335,000	0	335,000	0
59-a-3	Reduction of fire hazards: Phase II, gaseous diffusion plants, Oak Ridge, Paducah, and Portsmouth	11,900,000	0	11,900,000	0
59-a-4	New waste storage installations, Arco, Idaho	3,200,000	0	3,200,000	0
59-(i)	General plant projects	9,365,000	0	9,365,000	0
	Total	39,800,000	0	34,800,000	5,000,000

EXPLANATION OF PROJECTS IN SECTION A

1. Project 59-a-1, plant modifications for processing of nonproduction spent fuels, various AEC sites, $10,000,000

This project, which has a total estimated cost of $15 million, provides for necessary modifications and additions to available chemical separations and waste storage facilities to provide a processing capability for the recovery of source and special nuclear materials from power and propulsion reactor fuel elements. Separation facilities at Hanford, Idaho, Oak Ridge, and Savannah River will be used. The processing of the fuels from licensed reactors would only be for an interim period until industry provides the necessary capability in commercial facilities. The major portion of the costs is for equipment to be installed in existing, shielded buildings.

2. Project 59-a-2, pilot plant for fabrication of new fuel elements, Fernald, Ohio, $335,000

This project covers the construction of a building and necessary equipment additions to provide an adequate pilot plant for fabrication of new fuel elements. (Additional information of a classified nature is presented on page 239.)

3. Project 59-a-3, reduction of fire hazards, phase II, gaseous diffusion plants, Oak Ridge, Paducah and Portsmouth, $11,900,000

This project provides for the design and construction of fixed fire protection in gaseous diffusion plants in addition to that undertaken under project 58-b-7. The work presently contemplated under this project will consist of additional fixed fire protection in the two remaining gaseous diffusion buildings (K-25 and K-27) at Oak Ridge, constructed during World War II, and in all principal auxiliary process facilities having insulated metal roof deck construction, which support the gaseous diffusion plants at Oak Ridge, Paducah, and Portsmouth; and certain additional items of fire protection for the other 10 gaseous diffusion buildings in addition to that accomplished under project 58-b-7.

4. Project 59-a-4. New waste storage installations, Arco, Idaho, $3,200,000

This project is to provide waste tankage for the storage of radioactive waste discharged from the chemical separation processes at the Idaho chemical process plant, and associated treatment and disposal facilities. The radioactive waste solutions will be of varied composition and actively and generally of a very corrosive nature depending on the type of fuel element being processed and in all cases the storage of wastes will be in stainless steel. The tankage will be utilized to store wastes from processing fuels received from both research, development and power reactors.

5. Project 59-(i). General plant projects, $9,365,000

The work covered by this project includes miscellaneous improvements, alterations, additions and retirements, including minor new construction. Similar

work is performed annually in order to provide continuity of operations, improvement in production techniques, elimination of health hazards and reduction of operating costs in the various production plants and supporting facilities of the special nuclear materials construction program. Obligations in fiscal year 1958 will be approximately $9,060,000 for general plant construction.

Since many of the items contained herein are recurring in nature, funds for those types of work are requested on the basis of past years' experience. Funds are also required for projects for which a need has been established on the basis of process improvements, technological advances and experience gained from startup operations. The balance of the estimate is to provide for the many items that cannot be specifically identified in advance, although the need for similar items develops during each year's operations. The estimate for this work in fiscal year 1959 is less than 1 percent of the capital value of all special nuclear materials plants under the jurisdiction of the Oak Ridge, Hanford, and Savannah River Operations Offices.

The amount requested for each operations office is as follows:

Operations office:	*Amount*
Oak Ridge	$6,165,000
Hanford	1,500,000
Savannah River	1,700,000
Total	9,365,000

SECTION B

The projects comprising section B which have been previously authorized and for which funds have been appropriated previously, but are now carried over into fiscal year 1959, are:

Project No.	Title	Total estimated cost	Obligations incurred through fiscal year 1958	Obligations to be incurred in fiscal year 1959	Funding required after fiscal year 1959
58-b-4	Improvements to production and supporting installations, Hanford, Wash., and Savannah River, S. C.	$10,000,000	$5,000,000	$5,000,000	0
58-b-5	Additions to scrap plants, various sites	500,000	0	500,000	0
58-b-6	Additions to gaseous diffusion plants, Oak Ridge, Tenn	6,600,000	0	0	$6,600,000
57-a-3	Improved high level waste handling system, Savannah River, S. C	5,000,000	0	3,516,000	1,484,000
57-a-4	Reactor facility safety improvements, Hanford, Wash. (excludes $10,000 AE under advance AE 1957 projects)	4,990,000	590,000	4,400,000	0
57-a-5	Additional waste disposal system, Hanford, Wash. (excludes $10,000 AE under advance AE 1957 projects)	4,990,000	2,240,000	2,750,000	0
57-a-6	Charging and discharging facilities Hanford, Wash	3,450,000	0	3,450,000	0
57-a-7	Modifications to existing production facilities for increased efficiency and safety, Hanford, Wash. (excludes $50,000 under advance AE 1957 projects)	3,450,000	310,000	3,140,000	0
56-d-2	Reactor facilities modifications, Hanford, Wash	13,800,000	12,800,000	1,000,000	0
5209	Fabrication plant for fuel elements, site undetermined	10,000,000	0	10,000,000	0
4022	Pile modification facilities for increased production (phase I) Hanford, Wash	27,619,000	27,219,000	400,000	0
1017	Reactor products separations facilities, Savannah River, S. C	289,288,000	287,288,000	2,000,000	0
1018	Feed materials production and testing facilities, Savannah River, S. C	41,451,000	37,417,000	4,034,000	0
4070	Expanded production facilities, Oak Ridge, Tenn	232,884,000	223,684,000	[1] 9,200,000	0
	Total	654,022,000	596,548,000	49,390,000	8,084,000

[1] Special procurement by GSA.

FUEL ELEMENT TEST REACTOR

Mr. CANNON. What is the relationship, Mr. Commissioner, between items 59–a–2 on page 235 and 5209 on page 238?

Mr. FLOBERG. I will ask Mr. Bloch to give you a detailed statement of what that is, Mr. Chairman.

Mr. CANNON. You may supply that.

(The information requested follows:)

There is no relationship between projects 59–a–2 and 5209. Project 59–a–2 will provide a suitable area for producing test quantities of new fuel elements. The facility will be so constructed as to allow processing of both enriched and normal metal without danger of crossover or criticality.

New type of fuel elements are constantly evolved which appear more promising than existing elements. The only way to ascertain the operational characteristic of these designs is to produce test quantities of the elements and run this quantity through a reactor cycle. Normal production facilities cannot be used to fabricate these, leaving the alternative of blacksmithing the test quantities or utilizing a pilot plant. The facility proposed will not produce production quantities of any element but will have enough diversified equipment to produce test quantities of most foreseeable types of elements.

Project 5209 will provide a plant to produce production quantities of improved elements by improved techniques. Fuel elements presently in use are not the most economical or most effective elements for production reactors. Present alternative fabricating procedures being considered are extrusion and vertical heat treating. The authority for this plant to provide production quantities of fuel elements does not eliminate the need for a pilot plant to produce test quantities of new types of elements.

REQUIREMENT FOR FUNDS PREVIOUSLY APPROPRIATED

Mr. CANNON. For item 58–b–5, you showed a total cost of $1.5 million last year, and you estimated you would obligate the entire amount. This year you show a total cost of $500,000 and no obligation in 1958. How do you explain that situation?

Mr. BLOCH. Our budget estimate last year was based upon our estimate at that time of requirements for additional facilities to recover scrap. Since then we have been able to get more capacity out of some of our existing scrap facilities and have been able to combine certain enrichments we did not think we could as of a year ago.

Mr. CANNON. Without militating against the good of the service?

Mr. BLOCH. Yes, sir.

Mr. CANNON. Mr. Commissioner, last year you estimated $6.6 million would be used for item 58–b–6 in 1959. Now, according to what you have submitted in your justifications, it is to be indefinitely postponed. What accounts for the deferment?

Mr. BLOCH. Mr. Chairman, the $6,600,000 was based upon development work which at that point indicated we might have to add additional cooling towers to our gaseous diffusion plants because we were going to operate the cascade at higher temperature. The experience we have had thus far is limited, but so far we have not found it necessary to add these cooling towers. We need more operating experience at the higher temperatures before we finally know whether or not we will need them.

Mr. CANNON. Where is this $6,600,000 to be used? Where is it now?

Mr. MCCARTHY. The $6,600,000, Mr. Chairman, is included in the amounts we carry over into 1959 as a credit to the 1959 appropriation.

Mr. CANNON. It is still intact. None of it has been used or obligated?

Mr. MCCARTHY. None of it has been obligated. It is being declared against the 1959 appropriation request.

Mr. CANNON. It is not against this item.

Mr. MCCARTHY. No, sir. This would have to be funded at a later date if we decided to go forward.

FUTURE PLUTONIUM REQUIREMENTS

Mr. CANNON. The new plutonium production reactor at Hanford is being authorized by the Joint Committee and is expected to be passed by the House this week, in the next day or two. Of course, there are no funds in the budget for it, but you apparently contemplated financing it at some point in your negotiations with the Budget Bureau.

Is this plant needed to meet future plutonium requirements?

Mr. FLOBERG. I have another supplemental statement——

Mr. CANNON. Would you say it is or it is not?

Mr. FLOBERG. I do not think that question can be answered with a "Yes" or "No" answer, Mr. Chairman.

Mr. CANNON. If you do not think so, we would like you to tell us so.

Mr. FLOBERG. Do you want my personal opinion?

Mr. CANNON. We want your official opinion.

Mr. FLOBERG. As a Commissioner, I would have to respond to that question by saying that the military departments have furnished us no official requirement for additional plutonium.

Mr. CANNON. You and the committee are thoroughly familiar with this situation. You are also familiar with the program which the Joint Committee will submit to the House and which the House will agree to. In view of your knowledge, official and unofficial, of this situation, would you say that this plant will be needed to provide future plutonium requirements?

Mr. FLOBERG. I can give you my personal opinion, Mr. Cannon, and that is that it is needed, yes, sir.

Mr. CANNON. Your opinion is that it is needed?

Mr. FLOBERG. Yes, but I would like to have the privilege of reading a prepared statement which I have, a short statement, on all these additional items which have been added by the Joint Committee, if you would agree to my doing so.

Mr. CANNON. We are glad to have any information you can give us.

Reading here from the report of the Joint Committee on Atomic Energy, submitted July 2, 1958, on plutonium requirements:

Over the last 3 years, the Joint Committee received testimony in executive session from weapons development scientists and other military experts as to the needs for plutonium. In January 1958, as Director of the Livermore Laboratory, Dr. Herbert York testified before the Military Applications Subcommittee with regard to the relation between weapon design and the use of plutonium which reemphasized the need for additional production of plutonium. Testimony in executive session was also received by the Subcommittee on Military Applications in May 1958 from representatives of the Departments of the Army, Navy, and Air Force. Each service individually advised that currently planned production is insufficient to meet its needs.

Through these hearings it was ascertained that the Joint Chiefs of Staff, as long ago as September 1956—

and in terms of the rate at which we are moving this day and time, that goes back to ancient history—

had recommended to the Secretary of Defense the need for additional reactor production facilities.

In view of that statement and in view of facts which have not been controverted in any respect, you would say that we have sufficient plutonium and that we do not need these additional facilities, or would you say we do need them and will need them?

Mr. FLOBERT. I would say that, to the best of my knowledge, is an accurate statement of fact, Mr. Chairman. My personal opinion happens to coincide with that.

Mr. CANNON. You say this is inaccurate?

Mr. FLOBERG. It is accurate.

Mr. CANNON. It is an accurate statement of fact?

Mr. FLOBERG. Yes; as far as I know. To the best of my knowledge, it is accurate.

Mr. CANNON. Well, the testimony by the three services here is very explicit on that. The report says:

Testimony in executive session was also received by the Subcommittee on Military Applications in May 1958 from representatives of the Departments of the Army, Navy, and Air Force.

Testifying separately, all agreed, without exception, to the need for this additional supply of plutonium.

Mr. FLOBERG. Yes, sir; I believe that is correct.

PLANT REPLACEMENTS

Mr. CANNON. Will the present plants have to be replaced eventually to avoid excessive costs of maintenance or for efficiency reasons?

Mr. FLOBERG. I would like to ask Mr. Bloch to answer that question.

Mr. CANNON. Mr. Bloch, we would be glad to hear from you on that. We would like to know if the plants now in operation will have to be replaced eventually to avoid excessive costs of maintenance or for efficiency reasons.

Mr. BLOCH. Mr. Chairman, the life of the present plants is somewhat indefinite. They are pioneer reactors. On the basis of the best information and judgments we can get, it would appear that they can operate with reasonable efficiency for upward of 25 years, although this admittedly involves judgment. The oldest plants now are about 14 years old. As the plants grow older, it is reasonable to assume that the maintenance costs would increase somewhat. However it is pretty difficult to determine how much the maintenance costs would go up as the plants age.

Mr. CANNON. Again quoting from this highly authoritative report which we have before us here, on this particular reactor the committee determined and reported to the House:

In selecting Hanford as the site for this project, the committee gave consideration to the obsolescence of the older type production reactors currently in operation at that location. Testimony of experts reflected that these older reactors have been in operation for a period longer than originally planned * * *.

Would you say that is true?

Mr. BLOCH. Yes, sir, because since these were the first reactors and we learned as we went along, there were times when we thought their

useful life was quite short. Back in the very early days it was felt that they might last only a few years. As we have learned more about their performance and about the things which deteriorate, we have somewhat more confidence.

Mr. CANNON. Naturally these scientific procedures develop and become more definite through use and experience.

Mr. BLOCH. Yes, sir.

Mr. CANNON. Continuing, it says:

Testimony of experts reflected that these older reactors have been in operation for a period longer than originally planned and their future continual operation cannot be predicted with any accuracy.

Mr. BLOCH. I think that is right, and it involves judgment. We feel as a matter of judgment that they should operate reasonably well for a total life approaching 25 years.

Mr. CANNON. But you agree with them that you cannot definitely and positively predict that?

Mr. BLOCH. No, sir, we cannot definitely.

Mr. CANNON. Continuing:

Processing and separation facilities at Hanford are capable of absorbing additional products from this new reactor.

So apparently the new reactor is needed. Certainly with our international situation as it is now, we cannot afford to delay any facility which might contribute to our early preparation to meet contingencies. Would you say that is true?

Mr. BLOCH. The General Electric Co., who operate Hanford, have indicated they feel they could guarantee good performance out of the older reactors for 5 years. After that, it is somewhat indeterminate as to how well they might operate.

Mr. CANNON. This reactor at Hanford is authorized to be convertible in order to produce electricity eventually. If this committee were to recommend funds for starting construction with the understanding that modifications to produce electric power are contingent upon future congressional authorization, how much could be used in the next fiscal year?

Mr. FLOBERG. We estimate $45 million, Mr. Chairman.

Mr. CANNON. Any questions, Mr. Kirwan?

Mr. KIRWAN. No questions.

Mr. CANNON. Mr. Magnuson.

AEC POSITION ON ADDITIONAL PLUTONIUM REACTOR

Mr. MAGNUSON. How do you propose to fund this new reactor at Hanford which the Joint Committee proposes to authorize? In a supplemental appropriation later this year?

Mr. FLOBERG. No. We have not proposed to fund it. I believe it is in the authorization bill, however, which will be forwarded to the floor of the two Houses.

Mr. MAGNUSON. The funds cannot be in the authorization bill.

Mr. FLOBERG. We would have to present the appropriation request to the Bureau of the Budget.

Mr. MAGNUSON. I see. That is all.

Mr. CANNON. Mr. Taber.

Mr. TABER. You had a statement you desired to read on this situation?

Mr. FLOBERG. I had a short statement on this and other projects which the Joint Committee added to the authorization bill, Mr. Taber.

Mr. TABER. I would like to hear that.

Mr. CANNON. We will take up that item when we come to it.

Anything further on this item, Mr. Taber?

Mr. TABER. Yes.

Mr. CANNON. If the statement refers to this item, we would like you to read it at this time.

Mr. FLOBERG. Yes, it does refer to it.

Mr. CANNON. You may proceed.

ADDITIONAL PROJECTS ADDED BY JCAE IN 1959 AUTHORIZATION ACT

Mr. FLOBERG. The Joint Committee on Atomic Energy, in reporting out our authorization bill for fiscal year 1959, added certain projects which were not included in our recommendation to the Congress. These projects total $190,800,000.

Included was an authorization of $145 million ($6 million additional for supporting facilities may be necessary) for the construction of a new plutonium production reactor. We believe it might be desirable to review the history of this project for the committee.

In April the Commission sent to the Bureau of the Budget its supplemental appropriation request covering certain items, the need for which had arisen after the submission of the original budget. In its supplemental request the Commission did not include the additional plutonium production reactor because, at that time, it did not have a military requirement for additional facilities. However, during the course of discussions of the supplemental appropriation with the Bureau of the Budget, the Commission discussed a project for an additional plutonium production reactor in the amount of $120 million plus $6 million for supporting facilities.

The Commission advised the Bureau of the Budget that, if a military requirement was forthcoming, the formal submission would be appropriately modified. Since no statement was forthcoming from the Secretary of Defense on this matter during the pendency of the supplemental request, the item was never formally added. As a matter of fact, no such requirement has been received as of this date.

We are, however, aware that the Joint Committee has held hearings on this issue, and has received testimony from scientists and from the individual services of the Department of Defense, from which it has concluded that additional plutonium capacity should be constructed. The Joint Committee has further concluded that the additional plutonium production reactor should be designed to provide for the generation of electricity should this prove to be desirable in the future.

While as individuals the Commissioners may have their own opinions as to the requirements for additional plutonium production, as a Commission we must rely upon a formal statement of requirements from the Secretary of Defense. Should such a reactor be authorized and funds appropriated therefor, however, it is the view of the Commission that it would be desirable to add the additional $25 million necessary to make provision for the conversion of

such a reactor to the generation of electricity. We should point out that if the reactor were to be converted to the generation of electricity, an estimated additional $66 million would be required for 300,000 kilowatts, or about $120 million additional for 700,000 kilowatts, for related power generating facilities.

Mr. CANNON. We will take up the remaining items as we come to them. That concludes the discussion of the current project.

REQUIREMENTS FOR PLUTONIUM

Mr. TABER. What is the capacity for the production of plutonium at the present time?

(Discussion off the record.)

Mr. TABER. What is your present demand from the armed services?

Mr. FLOBERG. Our demand is for all that we can produce, Mr. Taber. It is an open-end requirement in that sense.

Mr. TABER. You mean they have a demand? I thought you told us in this statement that you had not any request from the armed services.

Mr. FLOBERG. No request to increase it; that is correct.

Mr. TABER. I do not see how we can have a demand and not have any request.

Mr. FLOBERG. Let me restate that. We have previously described our capacity to the Department of Defense and they have furnished us with their requirements for all that our capacity would produce. They have not furnished us with any requirement up to date for additional plutonium beyond our present capacity. I believe that is a fair way to state it. That is, the Department of Defense has not so requested us to proceed. This is not in contradition to what the chairman read regarding what the individual services have stated to the Joint Committee.

Mr. TABER. You mean that the Secretary of Defense has not correlated the requirements that the individual services told the Joint Committee they would require?

Mr. FLOBERG. I would say apparently the Secretary of Defense does not agree with the estimates of the individual services. Certainly he has not consolidated them or otherwise formalized them into a requirement which has been furnished to the Atomic Energy Commission.

Mr. TABER. I have quite a few questions I would like to develop.

Mr. CANNON. With relation to what the Commissioner has testified, it is generally recognized now that the next world war will not only be fought in the air but will be a nuclear war. Is that not a matter of general appreciation?

Mr. FLOBERG. I do not know about that, Mr. Chairman. You would have to ask the Pentagon people about that. It seems to me we have been in a war for about 12 years.

Mr. CANNON. But not a world war, not a general world war.

Mr. FLOBERG. It depends on your definition.

Mr. CANNON. I do not think anybody would deny that the next war will be decided in the air and with the use of nuclear weapons.

If we have to depend on nuclear weapons, the greater pressure we can bring to bear, the greater impetus we can give and the greater celerity we can develop right here is the hope of national defense.

Mr. FLOBERG. In the event of more overt hostilities, there is no doubt about that statement. That is certainly correct.

Mr. CANNON. I am sorry that Mr. Taber and I have to leave. The gentleman from Ohio, Mr. Kirwan, who knows more about the subject than anybody else, will preside.

Mr. KIRWAN. Mr. Taber said he had several questions to ask at this point, so if you have no objection, Dr. Fenton, I shall proceed to another point, and then when he comes back you and he may ask your questions on this.

Mr. FENTON. I would be glad to cooperate, but I have some very pertinent points on this.

Mr. KIRWAN. That is why I asked. When Mr. Taber comes back you and he ask the questions you want to ask.

WEAPONS PROGRAM

Mr. KIRWAN. Weapons program. Insert pages 240 to 251 in the record.

(The pages referred to follow:)

WEAPONS PROGRAM—CONSTRUCTION OBLIGATIONS

Program statement

Estimated obligations, fiscal year 1959	$52,799,000
A. Obligations for new projects	(44,900,000)
B. Obligations for prior-year projects	(7,899,000)
Estimated obligations, fiscal year 1958	53,206,000
Actual obligations, fiscal year 1957	62,316,658

Obligations for the weapons program for fiscal year 1959 are estimated at $52,799,000, of which $44,900,000 is for new projects justified in section A below which were authorized in the fiscal year 1959 Authorization Act. The balance of $7,899,000 is for projects listed under section B below which were authorized prior to fiscal year 1959 and for which funds have previously been appropriated but are now carried over into fiscal year 1959.

SECTION A

The projects comprising section A are as follows:

Project No.	Title	Total estimated cost	Funded through fiscal year 1958	Estimated obligations, fiscal year 1959	Funding required after fiscal year 1959 to complete project
59-b-1	Weapons products and development plant	$10,000,000	0	$10,000,000	0
59-b-2	Component fabrication plant, Hanford, Wash	3,500,000	0	3,500,000	0
59-b-3	Fabrication plant, Oak Ridge, Tenn	12,500,000			
	Less credit for salvaged material	3,700,000			
	Total	8,800,000	0	8,800,000	0
59-b-4	Special processing plant, Mound Laboratory, Ohio	2,000,000	0	2,000,000	0
59-c-1	Storage site modifications, various locations	1,500,000	0	1,500,000	0
59-c-2	Base construction, Eniwetok Proving Ground	2,342,000	0	2,342,000	0
59-c-3	Base construction, Nevada test site	1,780,000	0	1,780,000	0
59-c-4	Test area development, Nevada test site	600,000	0	600,000	0
59-c-5	Phermex installation, Los Alamos, N. Mex	2,250,000	0	2,250,000	0
59-c-6	Laboratory building, TA-33, Los Alamos, N. Mex	590,000	0	590,000	0
59-c-7	Test and environmental installation, Sandia Base, N. Mex	1,488,000	0	1,488,000	0
59-c-8	Lineal acceleration tester, Livermore, Calif	390,000	0	390,000	0
59-c-9	Test assembly building	510,000	0	510,000	0
59-c-10	High-explosive development plant, Livermore, Calif	2,000,000	0	2,000,000	0
59-c-11	Storage and handling building, Livermore, Calif	250,000	0	250,000	0
59-i	General plant projects	6,900,000	0	6,900,000	0
	Total	44,900,000		44,900,000	0

EXPLANATION OF PROJECTS IN SECTION A

1. 59-b-1. Weapons production and development plants, locations undetermined, $10,000,000

This project provides for the construction and acquisition of such additional production and development facilities as may be required to further the weapons program. The specific nature of these facilities cannot be forecast at this time; however, future production and development programs indicate that additional facilities in order to take early advantage of advances in the weapons field.
with new techniques, or both. This project will assure availability of funds to meet new production requirements and to provide research and development facilities in order to take early advantage of advances in the weapons field.

Research and development in new types of weapons and modifications to existing weapons are ordinarily not confirmed until field tested at overseas or continental test sites. When successfully tested, the work progresses rapidly into the final development, engineering for production, and production stages. Specific facilities which may be required by these stages are dependent on the particular idea which has been successfully field tested and cannot, in many cases, be predicted in sufficient time for inclusion in the regular budget submission.

Until the parameters of new weapons can be accurately defined, it is not possible to foresee all of the development, production, and environmental testing operations that may be involved and whether existing facilities are adequate to accomplish the programs. The introduction of new materials requiring new development techniques and manufacturing processes creates need for additional plant that cannot be anticipated for inclusion in the budget. New environmental conditions to which weapons will be subjected in supersonic carriers will require facilities where weapons and weapons components can be tested in simulated environments to insure reliability. The environments to be encountered may not be fully known in advance of the regular budget submission.

Similar projects in prior fiscal years have made it possible to proceed with the timely acquisition of facilities to exploit research and development findings and to expand production plants. A like project in fiscal year 1959 will enable the AEC to take early advantage of advances in the weapons field.

Since this project is of a contingent nature, no breakdown of specific cost is available. Construction will start during the first quarter of fiscal year 1959 and be completed in the second quarter of fiscal year 1961.

2. 59–b–2 Component fabrication plant, Hanford, Wash., $3,500,000

This project is designed to provide Hanford with the necessary minimal facilities to fabricate weapon components. The proposed project can be provided at Hanford at comparatively nominal cost through maximum use of existing facilities. Adequate process area and services are available within the existing fabrication facilities. As currently conceived, new equipment will be provided for necessary processing and for the various quality control and auxiliary functions. Architectural revisions to the building will be made to accommodate equipment installation, to provide adequate ventilation, and to provide access to operating areas. Equipment at $2,320,000 is the major element of cost. Construction will start in the first quarter of fiscal year 1959 and be completed in the fourth quarter of fiscal year 1960.

3. 59–b–3 Fabrication plant, Oak Ridge, Tenn., $8,800,000

Technological advances in weapons development have resulted in the need for new fabrication facilities at Oak Ridge. This project provides for the establishment of a machine shop in an existing building. The shop will occupy an area of approximately 150,000 square feet on the basement and second floor of this building. The work will consist generally of the installation of necessary equipment, building modification and alteration, and extensions to existing utility and other building services.

Total cost of the project is estimated to be $12.5 million, this being reduced to $8.8 million in appropriation requirements with the transfer of $3.7 million in equipment anticipated to be made available within the AEC complex. Major item of cost is $9,760.000 for equipment. Construction begins in the first quarter of fiscal year 1959 and will be completed in the fourth quarter of fiscal year 1960.

4. 59–b–4 Special processing plant, Mound Laboratory, Ohio, $2,000,000

This project will provide a capability for special processing in an existing building at the Mound Laboratory. Extensive building changes and service modification will be required to accommodate the equipment to be installed. Of the total cost, $1,200,000 is for equipment. Construction is scheduled to begin in the third quarter of fiscal year 1959 and be completed in the third quarter of fiscal year 1961.

5. 59–c–1 Storage site modifications, various locations, $1,500,000

Experience gained through the use of storage sites as originally designed and constructed reveals that modifications and additions to existing plant are required to correct deficiencies in order to improve operating conditions and to achieve greater efficiency.

Types of modifications planned for accomplishment under this project are:

Major improvements to service road system (1 site)	$580,000
Replacement of floors in storage vaults and loading areas (several sites)	168,000
Additional water storage tanks (2 sites)	250,000
Resurface patrol roads (several sites)	150,000
Installation of water demineralization facilities (1 site)	100,000
Additions to fire stations, installation of improved fire-alarm systems and automatic sprinkler systems (several sites)	172,000
Addition to storage structures	80,000
Total	1,500,000

Construction begins in the second quarter of fiscal year 1959 and will be completed in the third quarter of fiscal year 1960.

6. 59–c–2. Base construction, Eniwetok Proving Ground, $2,342,000

This project includes the construction of base facilities at Eniwetok and Parry Islands. These facilities are considered necessary to the safe and efficient accomplishment of test operations at the Eniwetok Proving Ground. Construction

will begin in the first quarter of fiscal year 1959 and be completed in the third quarter of fiscal year 1960.

7. 59–c–3. Base construction, Nevada test site, $1,780,000

This project, covering several items of additions and replacements, recognizes and attempts to correct inadequacies in plant at the Nevada test site. Facilities erected for operations of brief duration for one weapon laboratory have been supporting (with very minimum additions and replacements) operations greatly increased in size, scope, and duration at the technical direction of two laboratories. The most critical needs are for working space (in laboratories, in shops, and in offices) and for storage space and utilities. Construction begins in the first quarter of fiscal year 1959 and will be completed in the fourth quarter of fiscal year 1959.

8. 59–c–4. Test area development, Nevada test site, $600,000

This project consists of 10 miles of a primary surfaced highway and a permanent electrical distribution and signal system to a test area at Nevada test site. Work is scheduled to begin in the first quarter of fiscal year 1959 and to be completed in the third quarter of fiscal year 1959.

During Operation Plumbbob test series the feasibility of contained underground nuclear detonations was the subject of an experiment at a new remote firing area called the "tunnel site." For this experiment temporary roads to the new area were provided, power requirements were met by a portable generator and, since a minimum of instrumentation was required, temporary cable and field wire installations sufficed.

The results of the underground test demonstrated that some nuclear devices may be detonated underground and radioactive fallout completely contained. Such testing will require a larger and more extensive system of tunnels in the area and dictate the permanent road, utility and signal system indicated above.

9. 59–c–5. Phermex installation, Los Alamos, N. Mex., $2,250,000

This project will provide a weapons diagnostic facility, and special firing and detection equipment and facilities. The building will be of reinforced concrete construction with concrete thickness adequate to withstand shock during firing, and the Phermex bunker and control building will have protective earth shielding. This facility will be located in a remote technical area at Los Alamos. Construction begins in the second quarter of fiscal year 1959 and is scheduled for completion in the second quarter of fiscal year 1960.

10. 59–c–6. Laboratory building, TA–33, Los Alamos, N. Mex., $590,000

This construction will provide a 10,800 square feet laboratory building for the LASL personnel engaged primarily in the development and testing of specialized components for weapons systems.

This group is now performing its functions in widely separated areas. Special facilities have been constructed at a remote site for use in specialized experiments and processes requiring the use of high explosives and radioactive materials, but laboratory, engineering, and general office space has not yet been provided. In the interim, the latter type space is temporarily and quite inadequately provided in the administration building in the main technical area. The greatest disadvantage of this temporary arrangement, and one which is seriously slowing the work, is that a great deal of technical and scientific man-hours are lost in traveling between the 2 points, a distance of nearly 10 miles.

Construction will start in the second quarter of fiscal year 1959 and be completed in the fourth quarter of fiscal year 1959.

11. 59–c–7 Test and environmental installations, Sandia Base, N. Mex., $1,488,000

This project consists of four separate facilities as follows:

(*a*) Complex wave system facility, $711,000: This construction consists of a 2,000 square foot reinforced concrete building, including a vibration table with a capacity of 25,000 pounds force, a 1,500 kilovolt-ampere transformer with switching gear, an electronic amplifier, and associated instrumentation. This facility is needed to duplicate as closely as possible the multiple vibration environments encountered under flight conditions which will exist in future weapons programs.

(*b*) Heated air wind tunnel facility, $425,000: This facility consists of a small wind tunnel duct with a high heat element to reheat the incoming air. This facility will be housed in a 2,800 square foot building to be constructed adjacent to the existing wind tunnel, and will utilize the existing air storage and air compressor

facilities. This additional high temperature tunnel is required to simulate the extreme heat encountered by warheads in supersonic flight, so that their reaction to this environment can be determined and design accomplished to allow for these conditions.

(*c*) Low frequency vibration facility, $212,000: This project consists of a small (1,000 square feet) quonset-type structure protected by earth on the top and three sides, a 12-foot by 16-foot utility building, an explosion proof low-frequency vibration system, with associate local and remote control systems. Weapon programs require vibration tests in the low-frequency range, but there are currently no facilities either at Sandia or elsewhere for performing these tests.

(*d*) Accoustic testing facility, phase I, $140,000: This facility has been planned in two phases. The high intensity sound system falls into two general categories, i. e. electrical (phase I) and mechanical (phase II). This request covers the requirements for phase I which includes a 1,500 square foot building and an audio amplifier with associated utilities, controls, and instrumentation. Phase II is expected to be requested in a subsequent budget.

Construction of these facilities will begin in the first quarter of fiscal year 1959 and be completed in the fourth quarter of fiscal year 1959.

12. 59–c–8 Lineal acceleration tester, Livermore, Calif., $390,000

This project consists of an 800-square-foot building, launching tube and operations area, and the necessary special foundations and utilities.

This facility will permit the Sandia-Livermore branch to perform tests to measure the shock characteristics of parts of warheads designed by UCRL, and to explore new configurations designed to withstand severe field use conditions.

The facility will be more economical than the present ballistic flight tests, and will provide more valuable data due to the elimination of free-fall air drop variables.

Construction will start in the first quarter of fiscal year 1959 and be completed in the fourth quarter of fiscal year 1959.

13. 59–c–9. Test assembly building, $501,000

This project consists of a 10,400 square-foot main building with guardhouse and the necessary security fencing and lighting, and utilities. This facility is required to replace existing facilities which were not designed for the work being performed. Construction will start in the first quarter of fiscal year 1959 and be completed in the fourth quarter of fiscal year 1959.

14. 59–c–10. High explosive development plant, Livermore, Calif., $2,000,000

This project will provide for additional facilities at the University of California Radiation Laboratory's high explosive research and development area (site 300). The site was established in 1955 to provide for the research, development and testing of high explosives in support of the UCRL weapons research program. Construction authorizations through fiscal year 1958 have provided facilities in the firing area, where detonations are conducted. However, the high explosives processing area facilities are limited.

Some physical test facilities have been provided by prior authorization, but the advancement of the UCRL weapons program will require an expansion of these test facilities in the areas of physical, chemical and environmental testing. The increase in the technical facilities will require the improvement of the road leading to the site, and roads and utilities to the new facilities.

Construction will start in the second quarter of fiscal year 1959 and be completed in the third quarter of fiscal year 1960.

15. 59–c–11. Storage and handling building, Livermore, Calif., $250,000

This project will provide a 20,000 square-foot medium-high bay addition to the central stores building. The central stores building was constructed in 1956 primarily to serve as a storeroom and distribution point for small stores items. Due to lack of storage facilities, large warehouse items are currently stored in four old barracks buildings that are not fireproof, and which are of low bay, narrow specifications that do not permit efficient warehouse handling. Because of their design, the storage height in these old buildings is limited, and the use of timesaving equipment such as forklift trucks is not possible.

The need for an adequate, fireproof, centralized storage area for these large

items is urgently needed. A comparison of the space in the barracks buildings with the proposed addition is as follows:

	Gross square feet	Usable cubic feet
Barracks Bldgs. 164, 165, 166, 167	20,034	113,960
Proposed addition	20,000	196,336

The square footage will remain the same, but the cubic footage will increase over 70 percent. Construction will begin in the second quarter of fiscal year 1959 and be completed in the fourth quarter of fiscal year 1959.

16. 59–i General plant projects, $6,900,000

This project consists of miscellaneous improvements, alterations, additions, and retirements, including minor new construction and is a consolidation of projects required in the operation of production, research, and development, and minor facilities of the weapons program. Changes will be required to meet operating deficiencies and to improve processes to take advantage of technological advances and experience. Many of the items contained are known projects. There is also included provision for minor modification to roads, utilities, and other miscellaneous work which are required in a changing program and in order to maintain facilities at necessary levels of operating efficiency.

Estimate by operations office is as follows:

Albuquerque operations office	$4,400,000
San Francisco operations office	2,500,000
Total	6,900,000

Construction will begin in the first quarter of fiscal year 1959 and be completed in the second quarter of fiscal year 1960.

SECTION B

The projects comprising section B which have been previously authorized and for which funds have previously been appropriated but are now carried over into fiscal year 1959 are:

Project No.	Title	Total estimated cost	Obligations incurred through fiscal year 1958	Obligations to be incurred in fiscal year 1959	Funding required after fiscal year 1959 to complete project
58-c-1	Weapons production and development plant	$10,000,000	$7,620,000	$2,380,000	0
58-d-4	Engineering and laboratory building, Los Alamos, N. Mex	1,006,000	762,000	244,000	0
58-d-7	Reactor, area III, Sandia Base, N. Mex	3,185,000	1,393,000	1,792,000	0
58-d-3	High explosives development plant, Livermore, Calif	2,100,000	1,400,000	700,000	0
57-b-4	Weapons development and engineering facilities, Livermore, Calif	11,964,000	11,481,000	483,000	0
57-f-1	Metallurgy laboratory, Livermore, Calif	2,270,000	310,000	1,960,000	0
57-f-3	High explosives and weaponizing plant, Livermore, Calif	1,125,000	1,085,000	40,000	0
56-f-3	New Sigma laboratory, Los Alamos, N. Mex	5,100,000	4,900,000	200,000	0
56-1AE	Metallurgy laboratory, Livermore, Calif	281,000	246,000	35,000	0
56-2AE	Weapons development and engineering facilities, Livermore, Calif	686,000	631,000	55,000	0
56-3AE	High explosives and weaponizing plant, Livermore, Calif	80,000	70,000	10,000	0
	Total	37,797,000	29,898,000	7,899,000	0

WEAPONS PRODUCTION AND DEVELOPMENT PLANT

Mr. KIRWAN. Item 59–b–1 seems to be one of those catchall, just-in-case propositions. Why would not $5 million be as good a guess in this area as the $10 million guess you have made?

General STARBIRD. Mr. Chairman, over a period of years we have been gradually reducing the amount of the contingency project. We had $10 million last year. Following rigid screening and holding to only the essential projects, we have committed only $10 million.

As of the present time we have a list of some nearly $20 million worth of items which may well be required. On the other hand, they are not firm enough to make into line items.

Our situation is basically this: When we have a test series underway we have many things we are trying out. One is underway now and will not be completed for another month or so. As soon as the series is over and we know what is going to work and what need be developed immediately, we will decide what projects must go forward under that $10 million.

We feel that the $10 million is the minimum essential.

Mr. KIRWAN. Can you put in the record what the money went for this year?

General STARBIRD. We certainly can, sir.

(The information requested follows:)

Construction projects authorized under "Weapons production and development plant (project 58–c–1)"

Title and location:	*Total estimated cost*
Beta–4 machine shop, Oak Ridge, Tenn	$1,520,000
Gas laboratory, Livermore, Calif	500,000
Engineering test building, Livermore, Calif	500,000
Standards and physical test building, Sandia Base, Albuquerque, N. Mex	1,642,000
Device fabrication complex, Livermore, Calif	2,500,000
Livermore pool-type reactor addition, Livermore, Calif	300,000
Linear accelerator, Livermore, Calif	2,200,000
Ballistic test range, Winslow, Ariz	490,000
Fabrication facility, Mound Laboratories, Dayton, Ohio [1]	320,000
Not programed	28,000
Total, project 58–c–1	10,000,000

[1] Pending approval.

TEST SITES

Mr. KIRWAN. There are several items under this heading which seem to be for the purpose of moving toward more permanent installations and facilities at test sites. Explain why this is necessary.

General STARBIRD. Sir, as contrasted with something over $7 million appropriated this year for the Eniwetok area, we are now requesting just over $2 million. The logic of that is this, sir: We have and must maintain the Eniwetok Proving Ground, and we feel we must plan on being able to conduct efficient operations there in the future.

We have certain fixed construction which needs to be done out there. I can insert in the record the detail, or I can give it orally.

Mr. KIRWAN. All right, General.

(The information referred to follows:)

Required fixed construction at the Eniwetok Proving Ground is as follows:

Hangar and lean-tos	$998,000
Airfield improvements	249,000
Petroleum, oil, and lubrication, farm rehabiltation	300,000
Cold-storage warehouse	247,000
Water-distillation facilities	318,000
Minor construction, modifications, and addition	230,000
Total	2,342,000

HIGH-EXPLOSIVE DEVELOPMENT PLANTS

Mr. KIRWAN. What are the differences between items 59–c–10 on page 241, 58–d–3, and 57–f–3 on page 251, which are all captioned as "High-Explosive Development Plants" at Livermore, Calif.?

General STARBIRD. Sir, up until January of 1956, we had only one laboratory which was converting a design into a weapon. We had a second laboratory which was entirely a research laboratory, a new laboratory in Livermore. In the spring of 1956, we decided that certain designs need to be developed into weapons, the ideas for which had come from Livermore. To do weaponization, one must take high explosives, take them out and shoot them, shoot them many, many times with inert material to make sure that the actual method of assembly works right.

We initiated in 1955 and 1956 the development of a total area, a test area of about $13.5 million total cost. The cost through this year will bring that up to somewhere in the neighborhood of $11 million. We still have about 1 more year of construction to go. We are adding parts to this development test area only as required.

PHYSICAL RESEARCH PROGRAM

Mr. KIRWAN. Physical research program, $21,606,000. Insert pages 277 through 282 in the record.

(The pages referred to follow:)

PHYSICAL RESEARCH PROGRAM—CONSTRUCTION OBLIGATIONS

Program statement

Estimated obligations fiscal year 1959	$24,606,000
A—Obligations for new projects	(21,606,000)
B—Obligations for prior year projects	(3,000,000)
Estimated obligations fiscal year 1958	15,886,000
Actual obligations fiscal year 1957	21,882,441

Obligations for the physical research program for fiscal year 1959 are estimated at $26,606,000, of which $21,606,000 is for new projects justified in section A below which were authorized in the fiscal year 1959 authorization act or were previously authorized and for which a request for appropriation was deferred until fiscal year 1959. The balance of $3 million is for projects listed under section B below which were authorized prior to fiscal year 1959 and for which funds have previously been appropriated but are now carried over into fiscal year 1959.

SECTION A

The projects comprising section A are as follows:

Project No.	Title	Total estimated cost	Funded through fiscal year 1958	Estimated obligations, fiscal year 1959	Funding required after fiscal year 1959 to complete project
59–e–1	Accelerator improvements, University of California Radiation Laboratory, California	$500,000	0	$500,000	0
59–e–2	CP–5 reactor improvements, Argonne National Laboratory, Illinois	500,000	0	500,000	0
59–i	General plant projects	1,500,000	0	1,500,000	0
57–d–1	High-energy accelerator (as amended by fiscal year 1958 authorization)	27,000,000	$1,500,000	12,000,000	$13,500,000
56–e–1	Particle accelerator program (as amended by fiscal year 1958 authorization)	19,406,000	12,300,000	7,106,000	0
	Total	48,906,000	13,800,000	21,606,000	13,500,000

EXPLANATION OF PROJECTS IN SECTION A

1. Project 59–e–1. Accelerator improvements, University of California Radiation Laboratory, Calif., $500,000

This project provides for accelerator improvements to the existing accelerators at the University of California Radiation Laboratory. It includes improvements to the Bevatron, the 184-inch Cyclotron and the heavy ion linear accelerator and to the research equipment and other installations which are required and utilized in conducting experiments with these machines. Included are such items as systems for proton beam deflection and extraction, direct current power systems, shielding, a scattering chamber, and a motor generator set.

The additions and improvements to the Berkeley accelerator and research installations used in conjunction with the accelerators are required in order to increase the versatility, effectiveness, and utilization of these machines as research tools. The research program at Berkeley contemplates an increase in the variety and number of experiments utilizing the accelerators. Accordingly, improved accelerator utilization, efficiency and versatility must be obtained. These improvements will provide for increasing the utilization of the accelerators and for increasing the scope and type of experiments which can be conducted with the machines and will add to the potentiality of developing new data in the physical research program.

2. Project 59–e–2. CP–5 reactor improvements, Argonne National Laboratory, Ill., $500,000

This project will provide for an increase in the power level of the CP–5 reactor from 4 megawatts to 10 megawatts. The additions and modifications necessary to accomplish this will include: additional cooling tower capacity, water-cooled shielding plugs, improved emergency shutdown cooling for the reactor, a hot cave, a new lead coffin with accessory handling equipment, and a fuel storage canal.

An increase to 10 megawatts will raise the flux of the CP–5 to about 10^{14} and will increase considerably the value of the reactor for research experiments. The increased flux will make it possible to conduct studies of some of the transplutonium isotopes that cannot be formed at the present flux levels due to the short half lives and the multiple capture processes involved. In experiments where the neutron chopper is used, the higher intensity of the neutron beam will allow a larger flight path to be used with a resulting improvement in the resolution of the results. Present difficulties with the background radiation will also be minimized and the statistical accuracy of the experiments will be increased.

The increased neutron beam intensity will also permit higher collimation to be utilized with greatly improved resolution of the diffraction peaks obtained for low symmetry crystal structure studies. This will significantly improve the resolution and precision in the neutron diffraction studies of magnetic structures in the low angle scattering region. Neutron diffraction studies on small

single crystals and on small powder samples of rare isotopes will also be feasible. Finally this project will expedite the reactor fuel development program by reducing the time required for irradiation and inpile fuel irradiation loops. Irradiation damage studies will then be made at Argonne National Laboratory with a considerable savings in time and money. For example, the increased power level will allow the burnup of EBR–II fuel elements at a rate as fast or faster than will eventually be realized in EBR–II.

3. Project 59–i. General plant projects, $1,500,000

This project provides for the minor and often individually unpredictable capital improvements, modifications, and additions that are required each year to conduct the research and development program at the Oak Ridge National Laboratory, the Ames Laboratory and in the contract research program. The funds requested for fiscal year 1959 will be used as follows:

Oak Ridge National Laboratory	$1,200,000
Ames Laboratory	50,000
Contract research program	250,000
Total	1,500,000

4. Project 57–d–1. High energy accelerator (as amended by fiscal year 1958 authorization), $12 million

This project provides for the design and construction of a high-intensity, high energy proton accelerator (approximately 12.5 billion electron volts) and related laboratory and experimental areas at the Argonne National Laboratory. This project was authorized in fiscal year 1957 (project 542–57–d–1) for $15 million. The justification was made on the basis of an urgent need for extending the energy range beyond that of presently available machines. The site and specifications for the machine were undetermined at the time of its authorization.

Subsequent to the authorization of this project, the Argonne National Laboratory was selected as the site for this machine and a study was conducted to determine whether an accelerator meeting the present requirements could be built for $15 million. It was found that any accelerator built for this amount would exceed neither the energy nor the intensity of an existing machine or one already under construction in the United States. As a consequence, it was decided to increase the authorization for this project in fiscal year 1958 to $27 million. The amount of $1,500,000 was appropriated in fiscal year 1958 to begin the detailed design of the accelerator. The design of the machine has now progressed to the point where construction of the accelerator and related building can begin. An appropriation of $12 million is requested in fiscal year 1959 so that some of the main components of the machine that have a long lead time (i. e., the injector system) can be ordered and construction can begin on the buildings. The balance of $13,500,000 will be requested after fiscal year 1959.

This project will provide an accelerator much needed in the United States at an energy and intensity not otherwise available. The proposed machine will provide a copious source of antiprotons and antineutrons and will thus open the whole field of "antimatter" reaction for precise experimentation. The bevatron has permitted the discovery of these particles but its energy of 6 Bev. is too low for their production on a scale for precise experimentation. The machine will be capable of producing 10^{13} protons per minute, which is greater by a factor of 15 or 20 than that expected to be produced by the alternating gradient synchrotron now under construction at the Brookhaven National Laboratory. Its yield of antiprotons will be hundreds of times more than that of the Bevatron.

5. Project 56–c–1 Particle accelerator program (as amended by fiscal year 1958 authorization), $7,106,000

This project was originally authorized in the Commission's fiscal year 1956 authorization act in the amount of $10 million. It provided for the construction of two high-energy accelerators estimated to cost about $5 million each, to be based on proposals submitted by universities. In fiscal year 1956 the Commission accepted proposals from a Harvard-Massachusetts Institute of Technology group for a 6-Bev. electron accelerator estimated to cost $6.5 million, and from a Princeton-University of Pennsylvania group for a 3-Bev. proton accelerator estimated at a cost to the Commission of $5.8 million, in addition to which Princeton-Penn would contribute $0.5 million of their own funds to provide an accelerator costing in total $6.3 million. Thus, based upon these two proposals the total cost to the Commission was estimated at $12.3 million, which amount was within the 25

percent overrun provision applicable to this project. Accordingly, contracts were negotiated and design and construction authorized to start. While construction has been initiated in both cases, at Princeton the accelerator per se has not as yet started.

On the basis of a recent cost reanalysis based on more complete design data, it is now apparent that both of the accelerators will overrun the original estimates as follows:

[In millions]

	Original estimate	Latest estimate	Increase
Harvard-MIT	$6.5	$8.2	+$1.7
Princeton-Penn	5.8	11.2	+5.4
Total	12.3	19.4	+7.1

An analysis of the increase in each case is as follows:

	Millions
Harvard-MIT:	
Increased magnet costs	$0.4
Increased university salary costs	.1
Higher design costs	.1
Contingency	1.1
Total	1.7
Princeton-Penn:	
Increased shielding costs due to change in minimum exposure standards	.5
Increase in labor and material costs	1.0
Higher design costs	.5
Increased construction costs due to increased complexity of accelerator and more stringent design criteria	1.1
Increased project administration	.1
Preoperational testing of accelerator	.2
Contingency	2.0
Total	5.4

Therefore, an additional amount of $7,106,000 is required in fiscal year 1959 to complete construction of these accelerators.

SECTION B

The project comprising section B which has been previously authorized and for which funds have previously been appropriated but are now carried over into fiscal year 1959 is:

Project No.	Title	Total estimated cost	Obligations incurred through fiscal year 1958	Estimated obligations, fiscal year 1959	Funding required after fiscal year 1959 to complete project
4019	Alternating gradient synchrotron	$26,000,000	$23,000,000	$3,000,000	0

COMPARISON OF UNITED STATES AND RUSSIAN ACCELERATORS

Mr. KIRWAN. In general, how do our American accelerators compare with those in Russia?

Dr. WILLIAMS. At the present time, sir, we have in this country a 3-billion electron volt accelerator at Brookhaven and a 6 Bev. accelerator at the University of California Radiation Laboratory. These compare very favorably with the operating Russian machine. The Russians have a 10-billion-electron volt machine which has been

completed but, to the best of our knowledge, it is not working very satisfactorily at the moment.

(The following additional information was subsequently furnished for the record:)

In the United States we have, under construction, 4 accelerators: A 3 billion electron volt proton machine at Princeton, a 6 billion electron volt machine at Harvard-MIT, a 12.5 billion electron volt proton machine at Argonne, and a 30 billion electron volt proton machine at Brookhaven.

We have good reason to believe that the Russians are now designing and planning to build a 50 billion electron volt proton accelerator.

ADDITIONAL PROJECTS IN AUTHORIZATION BILL

Mr. KIRWAN. The Joint Committee is authorizing 14 additional physical research projects which are not budgeted. Would these projects help to speed up development of the atomic energy art in this country?

Mr. FLOBERG. At this point, in response to that question, could I read the balance of this short statement?

Mr. KIRWAN. Could you say "Yes" or "No" to it, first?

Mr. FLOBERG. I think the answer is "Yes," but I would like to read this short statement.

Mr. KIRWAN. You may do that.

Mr. FLOBERG. The joint committee added to the authorization bill as we submitted it to them, 18 projects other than the plutonium production reactor which I previously discussed. These 18 projects totaled $45,800,000 primarily to provide additional facilities for the physical research program.

Two of the projects, the process development plant at Ames, Iowa, and the Metals and Ceramics Building at Oak Ridge included in the reactor development section of the bill, were recommended by the Commission to the Bureau of the Budget in the supplemental request, but were not included within the overall allowance approved by the Bureau primarily because these projects did not meet the President's criteria of restricting construction starts to those considered to be absolutely essential. The other 16 added projects had been recommended by the Division of Physical Research to the Commission but had not been forwarded to the Bureau of the Budget by the Commission on the ground that they did not meet the above-mentioned criteria.

While the Commission certainly does not question the desirability of proceeding with each of the projects added to the bill by the joint committee, it must recognize the necessity of following certain criteria of essentiality if the Federal budget is to be kept within bounds. Should these additional items be authorized, we will discuss the necessary additional appropriation request with the Bureau of the Budget.

BIOLOGY AND MEDICINE PROGRAM

Mr. KIRWAN. "Biology and medicine program," $2,200,000. Insert pages 283 to 284.

(The pages referred to follow:)

BIOLOGY AND MEDICINE PROGRAM—CONSTRUCTION OBLIGATIONS

Program statement

Estimated obligations fiscal year 1959	$2, 200, 000
A—Obligations for new projects	(2, 200, 000)
B—Obligations for prior year projects	(0)
Estimated obligations fiscal year 1958	1, 272, 000
Actual obligations fiscal year 1957	1, 076, 501

Obligations for the biology and medicine program for fiscal year 1959 are estimated at $2,200,000, all of which is for new projects justified in section A below which were authorized in the fiscal year 1959 authorization act.

SECTION A

The projects comprising section A are as follows:

Project No.	Title	Total estimated cost	Funded through fiscal year 1958	Estimated obligations, fiscal year 1959	Funding required after fiscal year 1959 to complete project
59-f-1	Installations for support of research dealing with radioactive fallout and related radiation hazards	$2, 000, 000	0	$2, 000, 000	0
59 (i)	General plant projects	200, 000	0	200, 000	0
	Total	2, 200, 000	0	2, 200, 000	0

EXPLANATION OF PROJECTS IN SECTION A

1. Project 59–f–1. Installations for support of research dealing with radioactive fallout and related radiation hazards, $2,000,000

The project covers construction as may be required to expand the research programs in the studies of radioactive fallout problems and the biological hazards of radiation. The initiation or expansion of long-range studies of radiation effects on man and his environment will require the construction of a number of installations not otherwise available. These would include, but not necessarily be limited to:

(1) Dog holding areas, providing holding kennels, runs, disposal units for waste materials, radiobiology and analytical laboratories, etc.;

(2) Large animal areas (cows, sheep, goats, swine, etc.) providing fencing, shelter, waste-disposal units, and space for laboratories and offices; and

(3) Fabrication of whole body counters for use with human beings and large animals, with heavily shielded enclosures of steel or brick and counting equipment, including crystals and multichannel analyzers.

2. Project 59 (i), General plant projects, $200,000

To provide for miscellaneous alterations, improvements, and minor additions to general plant and research installations of the biomedical research program necessary to improve efficiency of operation, correct safety and security hazards and facilitate advances in research. The estimate, based on past experience as to requirements, will cover the necessary improvements at Commission operated laboratories in the life sciences, as well as minor construction or alterations required by biology and medicine Commission supported research at universities and other research institutions.

TRAINING, EDUCATION, AND INFORMATION

Mr. KIRWAN. Training, education, and information, $4,100,000. Insert pages 285 through 288.

(The pages referred to follow:)

Training, Education, and Information Program—Construction Obligations

Program statement

Estimated obligations, fiscal year 1959	$5,100,000
A—Obligations for new projects	(4,100,000)
B—Obligations for prior year projects	(1,000,000)
Estimated obligations, fiscal year 1958	2,000,000
Actual obligations, fiscal year 1957	0

Obligations for the training, education, and information program for fiscal year 1959 are estimated at $5,100,000, of which $4,100,000 is for new projects justified in section A below which were authorized in the fiscal year 1959 Authorization Act. The balance of $1 million is for a project listed under section B below which was authorized prior to fiscal year 1959 and for which funds have previously been appropriated but are now carried over into fiscal year 1959.

SECTION A

The projects comprising section A are as follows:

Project No.	Title	Total estimated cost	Funded through fiscal year 1958	Estimated obligations, fiscal year 1959	Funding required after fiscal year 1959 to complete project
59-g-1	Additional plant for the Regional Nuclear Training Center, P. R.	$500,000	0	$500,000	0
59-g-2	International Atomic Energy Agency research reactor and laboratories	2,000,000	0	2,000,000	0
59-g-3	Gamma process development irradiator	1,600,000	0	1,600,000	0
	Total	4,100,000	0	4,100,000	0

EXPLANATION OF PROJECTS IN SECTION A

1. Project 59-g-1. Additional plant for the Regional Nuclear Training Center, Puerto Rico, $500,000

This project provides for the construction of a laboratory at a location convenient to the medical training and research staff and the hospital plant of the School of Medicine of the University of Puerto Rico, in the San Juan area.

During fiscal year 1958 construction is being initiated for the establishment and operation of a regional nuclear training and research center in Puerto Rico to serve Spanish-speaking people in Puerto Rico and Latin America. The fiscal year 1958 phase provides for training and research in nuclear science and engineering.

The fiscal year 1959 phase will provide additional plant for training in the application of nuclear techniques to medicine, particularly to basic medical studies relating to cancer. It will provide for resident physicians to undertake training, clinical research, diagnosis, and therapy in the field of cancer, applying nuclear techniques. Based on a tentative scope determination, approximately 13,000 square feet of a laboratory-type building will be required.

2. Project 59-g-2. International Atomic Energy Agency research reactor and laboratories, $2 million

This project provides for the construction, at a site to be determined by the International Atomic Energy Agency, of a research reactor appropriate to the needs of the Agency. It also provides for the construction of such radioisotope laboratories as the Agency, in consultation with the United States, determines most needed and appropriate to its program of furthering the peaceful uses of atomic energy on a worldwide basis. The project is now in the planning stage and definitive details are not available. Tentatively, it is assumed that the reactor phase of the project will involve costs of approximately $1.5 million and the radioisotope laboratories, $500,000. (As a basis for costing, a 1-megowatt pool-type reactor and a modern low-level isotope laboratory were hypothesized.) As an alternative, these funds would also be available for a grant to the Agency to provide the above or similar research installations for the Agency.

Subsequent developments, including the possibility of the Agency augmenting the project from funds contributed by other countries, may involve an enlargement of the scope of the reactor phase of the project. It may also be determined necessary to increase the scope of the reactor project by reducing the scope of the planned radioisotope laboratories. In either or any case, equipment and/or capital structures procured by funds involved herein will be identified (through appropriate plaques or otherwise) as provided by the United States, whether or not the Commission actually constructs the installations or grants funds to the International Agency itself for procurement and construction.

The idea of an International Atomic Energy Agency which would not only further the peaceful uses of atomic energy on a worldwide basis, but through the use of appropriate safeguards, including inspections, would insure that projects fostered or assisted by the Agency will in fact, be confined to peaceful uses, was conceived by the United States. It is to the interest of the United States and its foreign policy that the Agency undertake at an early date a substantive and viable program. Essential to such a program is the need to fill a worldwide requirement for more training and research in nuclear science and technology in all applications. This project will place in the hands of the Agency capital equipment requisite to initiate such training and research.

3. Project 59–g–3. Gamma process development irradiator, $1,600,000

This project provides for the construction of an irradiator at a site to be determined by the AEC after investigation and analysis of potential geographical locations during fiscal year 1958.

Present research and development on high-level radiation indicates possible commercial scale application of megacurie radiation sources in industrial processes, such as sterilization of drugs and surgical supplies, polymerization, induction of chemical reactions, and product improvement. Successful utilization of fission byproducts for these purposes would convert these reactor wastes into a national asset.

The present unavailability of means of achieving a scale-up of research and development from existing kilocurie to megacurie sources constitutes a major gap militating against rapid development of the field of applied radiation in the United States. Immediate need, therefore, exists for an aggressive program to accelerate development of this field. Early realization of the economic potential of high-level radiation applications in industry and assurance of United States world leadership in nonpower uses of atomic energy require such an effort.

This project will provide irradiation facilities having maximum flexibility as to source type and geometry for high-level irradiation of solids, liquids, and gases. The developmental efforts will be directed toward demonstration of the efficacy and economic potential of high-level radiation in industrial manufacturing processes. Based on a tentative scope determination, approximately 12,500 square feet of a shielded-type building will be required.

SECTION B

The project comprising section B which has been previously authorized and for which funds have previously been appropriated but are now carried over into fiscal year 1959 are:

Project No.	Title	Total estimated cost	Obligations incurred through fiscal year 1958	Obligations to be incurred in fiscal year 1959	Funding required after fiscal year 1959 to complete project
58–j–1	Nuclear training project, Regional Nuclear Training Center, Puerto Rico	$3,000,000	$2,000,000	$1,000,000	0

FUNDS FOR INTERNATIONAL ATOMIC ENERGY AGENCY

Mr. KIRWAN. On page 286 you indicate the $2 million for a reactor and an isotope laboratory for the International Atomic Energy Agency would also be available as a grant if this alternative is decided upon. Just what are these funds for and why are they needed?

Mr. FLOBERG. I will ask Mr. Kirk to respond specifically to that question.

Mr. KIRK. Mr. Chairman, the funds were proposed as a means by which the Agency could carry out its program. In order to have a basis for funding, the estimate was prepared for a research reactor, 1-megawatt type, and an advanced radioisotope research laboratory. This was necessary in order to produce the estimate which was made.

Similar contributions by other nations may make a more extensive facility possible, which is why we have presented the request with an element of flexibility.

Mr. KIRWAN. You ask for $2 million. Is it money, or what?

Mr. KIRK. Yes, sir; it would be money which is being requested, and the money would be expended according to developments.

Mr. KIRWAN. Would you give the Agency the money?

Mr. KIRK. Not necessarily, sir. This has not yet been established.

Mr. KIRWAN. You are not sure, then, whether you will give it? Yes or no.

Mr. KIRK. I think the answer depends upon the development of the Agency's facilities. It may develop that we will provide a research reactor.

Mr. KIRWAN. I think the committee should know whether you are going to give them equipment or cash or what. We ought to have a little idea of what will take place.

Mr. KIRK. As I indicated, the basis for the estimate was the provision of a research reactor and a radioisotope laboratory. In the event the Agency decided that these were facilities which needed to be constructed, then we would essentially provide them with equipment as such. But it may be possible that other nations would wish to contribute additional money. Here again, it may be that we would provide equipment. On the other hand, some of the money might go for local construction of a research reactor, for example.

Until the Agency's design plans are firm, we cannot allocate precisely the expenditure of this money.

Mr. FLOBERG. Mr. Chairman, I would like very briefly to tell you the history of this project so you get a little idea of the background.

Last year at the organizational meeting of the International Atomic Energy Agency, various countries were pledging various nuclear items to the Agency as a gesture, for one thing, and also as a real substantive contribution to the success of the Agency. We pledged a considerable amount of fissionable material. The Soviet Union did the same; 1 or 2 other countries contribute small amounts.

Other pledges of libraries, and things of that sort, were made. The Chairman of the Atomic Energy Commission conferred with the members of the Joint Committee who were then in Vienna. I do not know how many there were, whether a majority or not, but there were several. The result of that conference was a pledge, if you choose to use that word, by the Chairman of the Commission, of this reactor. The Joint Committee was thoroughly informed of that decision at the time that it occurred.

This is just by way of background.

Mr. KIRWAN. I am glad to have that background. You say the Joint Committee was notified. Is it the practice that they can go ahead and make those promises when they meet, that the United

States will give so much and other nations will give so much, without Congress authorizing it? Is that in the law?

Mr. FLOBERG. The pledge was contingent upon congressional action, Mr. Chairman.

Mr. KIRWAN. That is what I mean. They make that promise and, to be truthful with you, we haven't any idea of how we are to get the money or what it will be for.

Mr. FLOBERG. At that time there was no doubt about the best form that this contribution to the success of the Agency should take. As far as I know, this is still considered the best form, but time does march on and circumstances may change. We do not want to have a millstone around our necks and be required to give something which is unnecessary or undesirable when something else in the meantime may have acquired a supervening priority.

Mr. KIRWAN. I was very much interested last week in the hearings on the foreign-aid bill to learn that we owe $39 billion in debts, more than all the rest of the world put together. Then when I go home I see unemployment in the steel industry, a commodity basic to them all. The industry is employing only 43 percent of its work force in the third or fourth largest steel center in this country.

You covered it a while ago. This is a big war we are in. The chairman asked you if we are at war. Sure, we are in the biggest war of them all right now. There are 160 million suffering. There were only 13 million in the Second World War. Only about one-fourth suffered, and they were trained.

In this war, which involves 160 million or 170 million, women and children are suffering the most, and they are not trained to suffer. That comes through the amount of money we are spending all over, or giving away, as happened last week here on the floor. We have $39 billion more of debts than all the rest of the world put together. We are out trying to tell the world today that we can help them all when we cannot even help ourselves. We are going to a $10-billion deficit next year.

(Off the record.)

COMMUNITY PROGRAM

Mr. KIRWAN. Community program, $1,150,000. Insert pages 289 through 291.

(The pages referred to follow:)

COMMUNITY PROGRAM—CONSTRUCTION OBLIGATIONS

Program statement

Estimated obligations, fiscal year 1959	$2,050,000
A—Obligations for new projects	1,150,000
B—Obligations for prior year projects	900,000
Estimated obligations, fiscal year 1958	5,934,000
Actual obligations, fiscal year 1957	4,716,579

Obligations for the community program for fiscal year 1959 are estimated at $2,050,000, of which $1,150,000 is for new projects, justified in section A below, which were authorized in the fiscal year 1959 Authorization Act or were previously authorized and for which a request for appropriation was deferred until fiscal year 1959. The balance of $900,000 is for projects listed under section B below, which were authorized prior to fiscal year 1959, and for which funds have previously been appropriated but are now carried over into fiscal year 1959.

SECTION A

The projects comprising section A are as follows:

Project No.	Title	Total estimated cost	Funded through fiscal year 1958	Estimated obligations, fiscal year 1959	Funding required after fiscal year 1959 to complete project
59-h-1	School storage building, Hanford, Wash	$75,000	0	$75,000	0
59 (i)	General plant projects	937,000	0	937,000	0
58-k-3	Additional water well, Los Alamos, N. Mex	138,000	0	138,000	0
	Total	1,150,000	0	1,150,000	0

EXPLANATION OF PROJECTS IN SECTION A

1. Project 59-h-1. School storage building, Hanford, Wash., $75,000

This project provides for the construction of a cinder block storage building as an addition to the school maintenance shop to house all active storage items in the Richland School District. At the present time, approximately 1,500 square feet of the school administration building is utilized as storage space for food and cafeteria supplies. The old high school is used to store used furniture, extra equipment, and bulky school supplies.

The construction of this building would (1) make it possible to utilize the present administration building for additional office and workroom space, thus avoiding the need for possible expensive administrative construction, (2) allow the abandonment of the deteriorated old high school building now used as a storage facility and (3) consolidate at one location all active storage space of the school district, thus making possible more efficient handling, control and storage procedures.

2. Project 59 (i). General plant projects, $937,000

This project covers alterations, additions, replacements and other general improvements of various types which are anticipated for schools, city roads and streets, sewage systems, municipal activities, water systems, electrical distribution systems, central steam plants, housing, business concessions, hospital and other community facilties. Normal operating requirements in past years indicate the need for numerous capital items each year in order to provide the most economical operation of facilities at the various communities.

3. Project 58-k-3. Additional water well, Los Alamos, N. Mex., $138,000

This project provides for the replacement of well No. 1 in Los Alamos Canyon which is no longer useful due to excessive sanding conditions caused by collapsed well casing. The replacement well will furnish the productive capacity required to meet the increasing demand for water brought about by additional housing, school plant, and laboratory facilities now under construction or recently completed.

The proposed well will be drilled to a depth of 1,500 to 2,000 feet depending on the water strata encountered. It will be located adjacent to the existing well and have a capacity of 500,000 gallons per day. The cost esimate of $138,000 is predicated on the assumption that existing equipment and buildings of well No. 1 will be salvaged and reused.

SECTION B

The projects comprising section B which have been previously authorized and for which funds have previously been appropriated but are now carried over into fiscal year 1959 are:

Project No.	Title	Total estimated cost	Obligations incurred through fiscal year 1958	Obligations to be incurred in fiscal year 1959	Funding required after fiscal year 1959 to complete project
58-k-2	Housing modifications, Los Alamos, N. Mex.	$1,000,000	$250,000	$750,000	0
D-57-1	Municipal facilities, Richland disposal	2,215,000	2,127,000	88,000	0
3050	Additional grade school facilities, Richland	225,000	194,000	31,000	0
9093 0052	Additional water well and sewage facilities, Richland	1,760,000	1,729,000	31,000	0

Administrative Program

Mr. Kirwan. Administrative program, $400,000. Insert page 292. (The page referred to follows:)

ADMINISTRATIVE PROGRAM—CONSTRUCTION OBLIGATIONS

Program statement

Estimated obligations fiscal year 1959	$400,000
A. Obligations for new projects	(400,000)
B. Obligations for prior year projects	(0)
Estimated obligations fiscal year 1958	4,330,000
Actual obligations fiscal year 1957	1,351,065

Obligations for the administrative program for fiscal year 1959 are estimated at $400,000 for the project justified in section A below. This project was authorized in the fiscal year 1959 Authorization Act.

SECTION A

Project No.	Title	Total estimated cost	Funded through fiscal year 1958	Estimated obligations, fiscal year 1959	Funding required after fiscal year 1959 to complete project
59 (i)	General plant projects	$400,000	0	$400,000	0

EXPLANATION OF PROJECTS IN SECTION A

1. Project 59 (i). General plant projects, $400,000

This project provides for alterations, additions, replacements, and other general improvements of various types at the Washington headquarters in Germantown, Md., and administrative facilities located in the field. Normal operating requirements necessitate a need for numerous capital items each year, many of which are of a recurring nature, for reasons of economy, safety, health protection, and efficient operations.

Mr. Kirwan. Have you any questions, Mr. Magnuson?

Mr. Magnuson. I believe I have no questions.

Mr. Kirwan. Dr. Fenton? While we have the time, you may go into anything that you have on your mind.

Special Nuclear Materials

PLUTONIUM REACTOR

Mr. Fenton. Coming back to the plutonium problem, these projects which are listed in this bill, H. R. 13121, have not been requested by the AEC, have they?

Mr. Floberg. All of them except the ones to which I referred in the short supplemental statement were requested.

Mr. Fenton. You have not requested the large reactor?

Mr. Floberg. We did not officially request it, that is correct, Dr. Fenton.

Mr. Fenton. It has not been approved by the Bureau of the Budget?

Mr. Floberg. That is correct.

We have had discussions with the Bureau of the Budget about it and expressed our personal views, but we did not officially in writing request the reactor, and the Bureau of the Budget did not clear the project.

Mr. Fenton. Are you in agreement with the Secretary of Defense?

Mr. Floberg. The Commission, as I stated before, Dr. Fenton, can act only on the formally stated requirements of the Secretary of Defense.

Mr. Fenton. They have not made any request?

Mr. Floberg. They have not made any formal statement of requirements to us, and consequently we have not acted formally on anything that we did not have.

Mr. Fenton. In section 101 (a) of the bill, H. R. 13121, project 59–a–5 is a production facility for special nuclear materials at Hanford, Wash., in the amount of $145 million.

Mr. Floberg. Yes, sir. That is the project we are discussing.

Mr. Fenton. Section 101 (a) (8) of Public Law 85–162, August 21, 1957, authorized you to spend $3 million for development, design and engineering of a large-scale, dual-purpose reactor for the production of special nuclear materials. As a result of that authorization, you engaged the General Electric Co. to make a study.

Mr. Floberg. And others; yes, sir.

Mr. Fenton. As a result of that study, on April 1, 1958, this year, you submitted a report to the joint committee summarizing the results of the design, engineering and development work, did you not?

Mr. Floberg. Yes, sir. Yes, sir, we did, on April 1, submit such a report.

Mr. Fenton. Have you given any details about the report prior to my questioning?

Mr. Floberg. To whom?

Mr. Fenton. The Joint Committee.

Mr. Floberg. They are well informed on this: yes, sir. As I recall, this report was submitted in both classified and unclassified form.

Dr. Libby. The law requires us to have it to them by April 1.

Mr. Fenton. Are you free to tell us what it is?

Mr. Floberg. We shall be glad to do it. Mr. Davis or Mr. Bloch may respond to that question in detail.

Mr. Bloch. The report covered a preliminary engineering and development study of an advanced type production reactor. It is a

graphite-moderated, water-cooled reactor which is basically similar to the reactors which already exist at Hanford. These higher temperatures and pressures involve some new development problems.

The other difference is really a function of the thing I mentioned. It involves a recirculating cooling loop instead of just once-through cooling water. Several years ago we concluded if we built any more reactors at Hanford, we would have to go to a recirculating primary loop because once-through cooling water goes through the reactor and directly back into the river, discharging a little bit of radioactivity into the river, and we felt we had reached the limit and, therefore, any additional reactors would have to have recirculating water.

The study developed several versions of this basic reactor concept ranging from a straight plutonium production unit with no capability for generation of byproduct power, to a unit which would have capability for taking off as much as 700,000 kilowatts of byproduct power.

That very generally is the scope of the report. The report covered the technical details, the development problems, and the estimated cost of producing plutonium from these various variations of the reactor design. The entire study was based upon a Government-financed project at Hanford. The study had particular application to that site.

Mr. FENTON. You have already stated the difference in production of plutonium.

Mr. BLOCH. Yes, sir. This would be an advanced reactor which would have more capability than our older units.

Mr. FENTON. What about the adidtional factor, producing electrical energy?

Mr. BLOCH. The study covered that and gave estimates of the cost of conversion and adding various increments of power. The study covered a range from a straight plutonium producer on through to a plutonium producer which would concurrently generate up to 700,000 kilowatts of byproduct electric power.

COMMISSION RECOMMENDATIONS RELATIVE TO PLUTONIUM REACTOR STUDY

Mr. FENTON. Did the Commission concur in the findings as outlined in the report?

Mr. FLOBERG. It was not the report's business to make recommendations, Dr. Fenton.

Mr. FENTON. I am trying to find out.

Mr. FLOBERG. It made no recommendations. All it did was state facts.

Mr. FENTON. Of course, the Joint Committee would be interested in the recommendations of the Commission.

Mr. FLOBERG. Inferences could well be drawn from the report, and the Joint Committee has drawn lots of them. I mean there was no specific punchline in the report which said:

On the basis of the previous facts, we recommend the following course of action.

That was not stated in the report.

Dr. LIBBY. I think perhaps we could say, Doctor, as our statement set forth, that had we had a requirement, we would certainly have stated this kind of reactor.

Mr. Fenton. As when any bill in the House is referred to the proper agency for their thoughts on the matter, whether it is a particular thing they are asking for or not, I must assume that H. R. 13121 was referred to the Commission for your opinion about it.

Mr. Floberg. I do not know if this bill was referred to us, Dr. Fenton. I do not believe it was. It was reported out of the committee in this form. It was not referred to us for comment before the hearing, or anything of that sort, to the best of my knowledge.

Mr. Fenton. To whom would that bill have been referred?

Mr. Floberg. The bill in its initial form was submitted by us, but it has been modified substantially in the committee. I do not believe that the modified form has been submitted to the Commission for comment.

Dr. Libby. There was no formal comment on it, Doctor. We work very closely with the Joint Committee in general and, as the law requires, we keep them fully and currently informed of our proceedings. I think it fair to say they have a pretty good notion of how we feel about most matters. No formal comment was made on H. R. 13121, I am informed by the staff.

Mr. Fenton. Are you precluded from giving us your opinion about it?

Mr. Floberg. If you ask for our personal opinion, I do not suppose we are, no, sir. I have already stated mine.

Mr. Fenton. Are you in agreement with the bill?

Mr. Floberg. It is my personal opinion that there is such a requirement, yes, Doctor, on the basis of my general information.

I could not prove it, but that is my feeling.

Mr. Fenton. Then you are in disagreement with the military, is that right?

Mr. Floberg. I should not say "disagreement." I think the military are in disagreement with themselves. The military departments have apparently stated to the Joint Committee that there is a requirement for this reactor, but apparently the Secretary of Defense has never so stated, and he certainly has never so stated to us. So if I am in disagreement with somebody, I suppose I would have to say I was in disagreement with the Secretary of Defense.

Mr. Fenton. Of course, it has been reported that the Joint Chiefs of Staff have made a recommendation for a substantial increase in capacity to produce plutonium for atomic weapons. You state it has not been approved by the Department of Defense.

The Secretary of Defense should, I believe, make such recommendation, particularly if a majority of the Joint Chiefs are in agreement. Do you happen to know what the Joint Chiefs think about it?

Mr. Floberg. My understanding is that the Joint Chiefs all agree, and the only disagreement is as to the degree of the increase. This is based on hearsay information, but I believe it to be correct.

Mr. Fenton. In connection with the proposed plutonium production facility, the dual-purpose facility, what is the estimated cost of the plutonium?

Mr. Floberg. I shall ask Mr. Bloch to give you the figures.

Mr. Bloch. I can give this on an index basis, and that would be unclassified, or I can give the actual dollars off the record. The actual dollars are classified.

Mr. FENTON. I would take off the record if it is classified.

Mr. TABER. If you can give it in a way that it is not classified, why do we not have it for the record?

Mr. BLOCH. The study developed a unit cost of producing plutonium for these various reactor types. The cost is a function of assumptions with respect to how long a production requirement will last. The study developed two campaigns.

On the one hand, it assumed a 10-year requirement for production and, on the other hand, a 25-year requirement. Using as 100 the cost of producing plutonium from a single-purpose unit assuming a 10-year requirement, then to produce plutonium from that same unit on a 25-year campaign, the index would be 79. The convertible reactor, if you do not convert it, on a 25-year basis, the index would be 90. But if you converted that unit to take off 300,000 kilowatts of power on a 25-year basis, the index would be 75; and for 700,000 kilowatts of power on a 25-year basis, the index would be 54.

If you assumed only a 10-year requirement, then taking off 700,000 kilowatts the index would go to 70. If you took off only 300,000 kilowatts, the index would be 111.

This establishes the general relationship. This is assuming a constant value of 3.58 mills for the power that would be generated.

Mr. FENTON. Can you give us what the convertible would be on a 10-year basis?

Mr. BLOCH. If not converted, the index would be 117 on a 10-year basis.

Mr. FENTON. Can you give us in dollars the difference, off the record?

Mr. BLOCH. The actual dollars?

Mr. FENTON. Off the record.

(Discussion off the record.)

COST OF REACTOR FOR PLUTONIUM PRODUCTION

Mr. FENTON. According to the report to you of April 1, the initial capital cost of a reactor of this type built for plutonium only but with built-in provision for subsequent installation of facilities to produce 300,000 kilowatts of electric power would be $151 million; is that correct?

Mr. FLOBERG. That is correct; yes, sir.

Mr. FENTON. The installation of the generators at some later date would cost an additional $59 million.

Mr. FLOBERG. I am informed that $66 million is the correct figure.

Mr. FENTON. The principal objective, of course, is the provision of plutonium capacity for military purposes. This objective would be obtained not only faster but at far less cost by the construction of a single-purpose rather than convertible type; is that right?

Mr. FLOBERG. On your stated premise, that is correct; yes, sir.

Mr. FENTON. The immediate savings would be the difference between the estimated $126 million for the single-purpose reactor and the $145 million authorized here; is that correct?

Mr. FLOBERG. I think you have $6 million floating in there, Dr. Fenton; $120 million is comparable to the $145 million. The additional $6 million should be added to either case.

That is why I concurred in the $151 million figure before.

Mr. FENTON. In addition to this saving, there would be a saving of approximately $60 million for future addition of power facilities.

Mr. FLOBERG. For a 300-megawatt plant, that is correct, sir.

Mr. FENTON. I take for granted you are in agreement with the bill.

Mr. FLOBERG. My personal opinion, or the position of the Commission?

Mr. FENTON. The Commission.

Mr. FLOBERG. The Commission, as I stated before, has no foundation on which officially to state that there is a requirement and, therefore, to recommend the construction of the reactor.

Mr. FENTON. Do you think we need this additional reactor for the production of electrical energy?

Mr. FLOBERG. My personal consideration of it is that that is considerably less important than the plutonium production capacity of the reactor.

Mr. FENTON. As I stated the other day, if you go into the generation of electricity, not only are you interfering with the mining of coal but you now will interfere with the great, established electric business, not only steam-electric power but hydroelectric power.

Inasmuch as the military requirement for a reactor of that type is essential, I think we should do first things first and not spell the destruction of other industries, which is what it will mean.

As I said before, we cannot interfere with progress, and we do not want to interfere with progress.

Mr. FLOBERG. I was interested to learn the other day, Dr. Fenton, that the Atomic Energy Commission installations consume 25 percent of the coal which is produced in Kentucky. It is the biggest single customer by a tremendous factor.

Mr. FENTON. The TVA buys a lot, also.

Dr. LIBBY. It is true we buy a lot of power from TVA to run our diffusion plants.

Mr. FENTON. Of course, we already know that.

I think that is all at this time, Mr. Chairman.

Mr. CANNON. Mr. Taber.

(Discussion off the record.)

Mr. TABER. I think I would like to have the rest of that statement read, or did you read it?

Mr. FLOBERG. I read it in your absence, Mr. Taber.

Mr. TABER. It is in the record?

Mr. FLOBERG. Yes, sir, it is in the record. The part begins at about the seventh line on page 3.

Mr. TABER. Would the Commission have sufficient engineers, scientists, and other trained personnel to carry on all of the projects called for in the proposed authorization bill?

Mr. FLOBERG. It is our belief, Mr. Taber, that the answer is "Yes."

Mr. TABER. Of the total funds which have been recommended by

the Joint Committee, what priority does each project bear to the others? That is, which ones are of the highest priority?

Physical Research

PRIORITY LIST FOR PROJECTS ADDED BY THE JOINT COMMITTEE

Mr. Floberg. We furnished the Joint Committee at their request a priority list of all the projects which are included in this group, in the descending order of priority.

Mr. Taber. Could you submit that to us?

Mr. Floberg. Yes, sir. we would be happy to put it in the record or I would be happy to read it to you, if you prefer. I think it better to put it in the record, because it is long and complicated.

Dr. Libby. There is one comment I would like to make about it. It is difficult to take the 16 projects and really put them 1, 2, 3, in order. We have done a little grouping. That is indicated in the covering letter to Mr. Holifield. I think if we give you the priority listing, we ought to give you the covering letter to Mr. Holifield which explains our thinking, Mr. Taber.

Mr. Taber. Should that be in the report?

Dr. Libby. We would be glad to furnish that.

Mr. Taber. All right.

Mr. Floberg. It is in the Joint Committee record, but it is not classified so I think it would be wise to have it in the record.

Mr. Taber. Then we will put that in the record.

(The documents referred to follow:)

United States Atomic Energy Commission,
Washington, D. C., June 20, 1958.

Hon. Chet Holifield,
Chairman, Subcommittee on Legislation,
Joint Committee on Atomic Energy,
Congress of the United States.

Dear Mr. Holifield: In response to your letter of June 13, 1958, there is attached a priority listing of the construction projects submitted to Representative Price on June 5, 1958.

While a listing has been prepared, we would like to point out that such a priority grouping is not, in our opinion, entirely realistic. The reason for this view is that each of the projects has merit for a particular segment of the program or towards the general improvement of the facilities at the different laboratories. As such, they are not truly comparable and cannot be practicably listed in an order of priority. However, with this explanation, the attached is submitted and we sincerely hope that it complies with your request.

If we can be of further assistance to you in this matter, please do not hesitate to call upon us.

Sincerely yours,

H. S. Vance for ——— ———,
Chairman.

Physical research construction projects not included in AEC's fiscal year 1959 authorization request

Relative priority	Construction project title	Total estimated cost
1	Metals and ceramics research building, ORNL	$6,500,000
2	Metals process development plant, Ames	1,900,000
3	Physics building, BNL	[1] 900,000
4	Accelerator improvements, UCRL	800,000
5	Cyclotron, UCRL	[2] 5,000,000
6	Chemistry hot laboratory, ANL	4,400,000
7	Expansion of stable isotope production capacity, ORNL	900,000
8	Particle accelerator program, Cambridge accelerator	1,300,000
9	Central Research Laboratory addition, ORNL	[3] 3,500,000
10	Chemistry building, addition, UCRL	2,000,000
11	10 Mev. Van de Graaff, ANL	2,500,000
12	Cyclotron, ORNL	3,000,000
13	High energy physics building, Columbia University	500,000
14	Research and engineering reactor, ANL	9,700,000
15	High flux reactor, BNL	10,000,000
16	Research reactor, Ames	3,800,000

[1] This amount represents an increase required in the prior authorization of $2,140,000 for project 57-h-2.
[2] The $3,000,000 previously shown for this project was an earlier estimate later revised during the budget process to $5,000,000.
[3] This amount represents the estimated cost of an additional wing to the central research building previously authorized under project 57-h-1 in the amount of $5,780,000, that was subsequently deferred.

Reactor Development Program

INDUSTRY PARTICIPATION

Mr. Taber. In your opinion, is the time allowed for requesting and accepting proposals from industry sufficient to permit proper analysis and decision by industry to participate in the research and development and construction of the various reactors which show economic properties?

Mr. Floberg. I would say it is my opinion, Mr. Taber, that it is a tight schedule, but one which is satisfiable. No slack time is allowed, I would say, but I believe it can be met.

Mr. Taber. Will the classifying of a particular type or size of reactor design and engineering study tend to preclude industry participation?

Mr. Floberg. I think it will not. We have cooperative arrangements with industry in general. I do not believe it will preclude people from participating.

Dr. Libby. I think, Mr. Taber, my understanding of the bill—and I would like to be corrected if I am in error in this—is that this does not preclude industry coming in as they have in the past with cooperative propositions. It just describes those things which we originate. I believe this understanding is correct.

I think when we consider that, it is quite satisfactory. I do not believe it will hinder cooperation with industry, because it does not preclude the other kind of arrangement.

INTERPRETATION OF SECTION 109 (F) OF THE AUTHORIZATION BILL

Mr. Taber. What is your interpretation of the full meaning of section 109 (f) of the proposed authorization bill? Will it lead to domination by the Joint Committee on Atomic Energy and tend to limit or preclude participation in the program by industry?

Mr. Floberg. Could I ask Mr. Davis to respond to your question, Mr. Taber, with regard to that subject?

Mr. Davis. My understanding of this is that we would have to designate a particular reactor by type and size and ask for invitations. If none are received within an appropriate period of time, the Commission would then be permitted to build the reactor.

There is no provision, except by getting completely separate authorization, for any cooperative project the way this bill is drafted. The answer, therefore, is that I think there is no way except by following the usual authorization process for any new project to get any industrially sponsored project included.

Mr. Taber. Would it be better to provide for inviting proposals by industry of the types and sizes which they would consider participation in?

Mr. Floberg. That is what the Commission recommended to the Joint Committee, I believe.

Mr. Taber. What I have just suggested?

Mr. Floberg. Yes, sir. Certainly it is more flexible that way.

Mr. Taber. Is it true that under the proposed authorization language, once AEC specifies the type and size of reactor for which design and engineering studies are to be made under project 59–d–13, AEC would then be committed or obligated to build such type and size reactor if no industry proposals are received or contracts negotiated in the short time allowed?

Mr. Floberg. If you are referring to project 59–d–13, Mr. Taber, at the bottom of page 4, I think the answer to your question is no, there is no compulsion to go ahead and build those reactors.

What we are doing here is submitting studies analogous or comparable to the studies we submitted on April 1 of this year to the Joint Committee with regard both to this production reactor and to the gas-cooled reactor. I would assume that any decisions about going further would depend on what the studies showed.

Mr. Taber. That is all I have, Mr. Chairman.

Mr. Cannon. You have made a very satisfactory report, Mr. Commissioner, on the use of current facilities.

Special Nuclear Materials

capability to meet military requirements

But I notice in the report of the Joint Committee on Atomic Energy to the House, dated July 2, 1958, they tell us that in 1957–58 the Joint Chiefs of Staff expressed concern over the capability of planned reactor production to meet future military requirements, and in May 1958 the Joint Chiefs of Staff unanimously recommended that the earliest practicable steps be taken to substantially expand reactor production.

I take for granted you agree with the recommendation of the Joint Chiefs of Staff on that point.

Mr. Floberg. I believe that is an accurate statement of fact. I would be glad to give my personal opinion, if you choose to have it.

Mr. Cannon. Then also the report calls attention to the fact that in June 1958 a classified report was submitted to the Joint Committee by the panel in which the panel reached three conclusions.

The first:

(*a*) Present and planned output of reactor products is substantially inadequate * * *.

That is a rather strong statement.

(*a*) Present and planned output of reactor products in substantially inadequate to meet the minimum of future needs of the armed services—

not all of the needs but even the minimum needs. They are at this time inadequate.

(*b*) A major expansion program for production of reactor products is economically sound and desirable.

(*c*) The existing system of the established requirements for fissionable materials has important shortcomings.

They conclude:

The Commission in recognition of the need for additional plutonium originally included a production reactor in its recommendation to the Bureau of the Budget in early 1958. This production reactor was eliminated by the budget prior to being submitted to the Joint Committee.

(Discussion off the record.)

Reactor Development Program

Mr. Cannon. We will take up now the reactor development program, in which we have a request for $159,737,000. We will insert in the record here pages 258 through 273.

(The pages referred to follow:)

Reactor Development Program—Construction Obligations

Program statement

Estimated obligations fiscal year 1959	$208,722,000
A. Obligations for new projects	(159,737,000)
B. Oligations for prior year projects	(48,985,000)
Estimated obligations fiscal year 1958	123,748,000
Actual obligations fiscal year 1957	102,378,116

Obligations for the reactor development program for fiscal year 1959 are estimated at $208,722,000 of which $159,737,000 is for new projects justified in section A below which were either authorized in the fiscal year 1959 Authorization Act, or were previously authorized and for which a request for appropriation was deferred until fiscal year 1959. Also included is $2,500,000 for advanced architect-engineer work for the heavy water power reactor. The balance of $48,985,000 is for projects listed under section B below which were authorized prior to fiscal year 1959 and for which funds have previously been appropriated but are now carried over into fiscal year 1959.

SECTION A

The projects comprising section A are as follows:

Project No.	Title	Total estimated cost	Funded through fiscal year 1958	Estimated obligations, fiscal year 1959	Funding required after fiscal year 1959 to complete project
59-d-1	Reprocessing pilot plant, Oak Ridge National Laboratory, Tennessee	$3,500,000	0	$3,500,000	0
59-d-2	Special purpose test installation	2,300,000	0	2,300,000	0
59-d-3	Fast reactor safety testing station, Nevada test site	1,367,000	0	1,367,000	0
59-d-4	Army reactor experimental area (AREA) Arco, Idaho	1,000,000	0	1,000,000	0
59-d-5	Hot cells	5,000,000	0	5,000,000	0
59-d-6	Army package power reactor No. 2	3,000,000	0	3,000,000	0
59-d-7	Modifications to organic moderated reactor experiment (OMRE), experimental boiling water reactor (EBWR), and boiling reactor experiment (Borax)	6,300,000	0	2,500,000	$3,800,000
59-d-8	Heavy water component test reactor	8,000,000	0	8,000,000	0
59-d-9	Fuels technology center addition, Argonne National Laboratory, Illinois	5,000,000	0	5,000,000	0
59-d-10	Gas cooled power reactor	51,000,000	0	51,000,000	0
59-d-11	Project Sherwood plant	2,000,000	0	2,000,000	0
59-xxx	Heavy water power reactor (A-E only)	2,500,000	0	2,500,000	0
59-i	General plant project	6,000,000	0	6,000,000	0
58-e-5	Test installation for classified project	9,000,000	[1] $2,500,000	[2] 6,500,000	0
58-e-6	Project Sherwood plant	10,000,000	5,000,000	5,000,000	0
58-e-11	Sodium reactor experiment (SRE) modification, Santa Susana, Calif	4,700,000	500,000	2,200,000	2,000,000
58-e-15	Plutonium recycle test reactor	15,000,000	5,000,000	10,000,000	0
57-c-2	Research and developmental test plant	27,500,000	15,000,000	12,500,000	0
56-b-2	Fast power breeder pilot facility (EBR-II)	29,100,000	14,850,000	14,250,000	0
58-e-16	Destroyer reactor plant, West Milton, N. Y	35,000,000	3,880,000	16,120,000	15,000,000
	Total	227,267,000	46,730,000	159,737,000	20,800,000

[1] $457,000 is carried over into fiscal year 1959 (see sec. B, p. 273).
[2] In addition, $457,000 will be obligated from funds carried over from fiscal year 1958 as indicated in sec. B.

EXPLANATION OF PROJECTS IN SECTION A

1. Project 59-d-1. Reprocessing pilot plant, Oak Ridge National Laboratory, Tennessee, $3,500,000

This project provides for the design, construction and additions to the present ORNL Thorex pilot plant, metal recovery plant, and multicurie fission products pilot plant so as to integrate their operation to study the various chemical "headend" processing techniques which have been under development for the past several years. The nature of the hot operations involved makes it highly unlikely that such demonstrations would be performed by private industry. To be conclusive, this demonstration must include the reprocessing of significant quantities of fuel at full activity levels.

It is planned to combine the existing pilot plant installations by means of an additional cell, mechanical handling area, and canal. The integrated systems will be capable of processing varying quantities of depleted to highly enriched uranium, plutonium, or thorium, and of demonstrating fission product recovery from wastes. Part of the integrated complex will also contribute to various military program requirements and will provide unique plants for the eventual recovery of certain power reactor, thorium-containing fuels under the interim processing program. "Custom" recovery jobs will continue to be performed but at higher activity levels than heretofore. All of these operations will also tend to insure a continuing feed to the multicurie fission products plant.

2. Project 59-d-2. Special purpose test installation, $2,300,000

This project provides for the construction of extensive development and test facilities for a classified project.

Additional information on this project is contained on classified page 274.

3. Project 59–d–3. Fast reactor safety testing station, Nevada test site, $1,367,000

This project provides facilities to investigate the safety of fast reactors. Permanent facilities to be constructed at this time consist of cooling pit, remote control facilities, supporting utilities, etc. Electrical power for normal operations will be brought in from the nearest network and a 500 kilowatt emergency power station will also be installed in the area in the event of power failure during operations. Moderate type roads will be required to and within the testing area. In addition, water supplies sufficient for the short period operations will be hauled in and stored. Trailers will be used as the need arises to handle personnel and equipment and, for this purpose, power outlets and parking space for the trailers will be provided.

It is the purpose of the reactor safety program to further insure the safety of fast reactors for civilian power generation. To this end, a fast reactor safety program is required at a remote area for which the Nevada test site has been selected.

4. Project 59–d–4. Army reactor experimental area (AREA), Arco, Idaho, $1,000,000

This project will consist of the engineering and construction of an experimental area to provide technical support to all reactors planned or underway for the Army power reactor program at the National Reactor Testing Station, Idaho. Examples of the types of facilities to be included are hot cells, a shop, and maintenance building.

Two Army reactors are currently underway at the national reactor testing station. These are the Argonne low-power reactor scheduled for completion in fiscal year 1959 and the gas-cooled reactor experiment scheduled for completion in early fiscal year 1960. It is highly probable that additional requirements for Army reactor projects will develop in future years, in which case extensive supporting technical services and installations will be required. Substantial savings will be possible if these services and activities are grouped in a centrally located technical support area. Installations which can profitably be grouped in this manner will be constructed under this project.

5. Project 59–d–5. Hot cells, $5,000,000

This project is for the construction of hot-cell facilities at various AEC laboratory locations. These cells will be located in appropriate buildings whose structures will probably be steel framing with reinforced concrete floors, metal roof panels, and built-up roof. Exterior walls will undoubtedly be of masonry construction, and each cell may be stainless steel, lined, constructed of high-density concrete, and equipped with manipulators and high-density viewing windows.

A similar project was authorized in fiscal year 1958 and $3,500,000 was appropriated. The amount required for fiscal year 1959 is to provide additional hot cells required for the reactor development program.

6. Project 59–d–6. Army package power reactor No. 2, $3,000,000

This project covers engineering and construction of a prototype packaged nuclear powerplant. The DOD will contribute funds necessary for the development of the conventional components of this plant.

Emphasis will be placed on achieving a low-cost plant requiring a minimum of attention for operation and maintenance and which will draw extensively on technology developed in current reactor development program, but will require extensions of the state of development to approach an optimum military system.

The plant visualized in this project is comparable to the APPR–1; however, it is to be designed to be preassembled into a minimum number of packages for rapid field erection.

It is anticipated that construction of the prototype packaged power reactor will be performed under lump-sum contract by an industrial contractor.

Additional information on this project is contained on classified page 275.

7. Project 59–d–7. Modifications to organic moderated reactor experiment (OMRE) experimental boiling water reactor (EBWR), and boiling reactor experiment (BORAX), $6,300,000

Reactor experiments are originally designed with the limited objectives of proving the technical feasibility of the concept or design approach. Full flexibility is not usually incorporated initially because all possible avenues of research and testing cannot be known before operating experience is obtained. Successful or even unsuccessful operation of the original experiment leads to the modifications

to exploit promising approaches or to correct problems that reactor operations uncover. This project is for modifying the OMRE, EBWR, and the BORAX reactors which are designed for thermal outputs in excess of 10,000 kilowatts.

Although the nature and extent of modifications to the reactor equipment cannot be fully determined at this time, the following is an indication of the work to be done:

EBWR: Modifications to permit analysis and comparison of the plant's performance with D_2O and H_2O using both forced and natural circulation of the coolant moderator. These modifications are necessary to determine the maximum capabilities of the plant with the present metallic core and with subsequent oxide and metallic cores.

BORAX: The present BORAX facility was designed as a low-cost, short-term experiment. The reactor pit was not coated or lined with a thermal shield. The same pressure vessel, pit, thermal shield, and associated equipment has been used for BORAX I, II, III, and IV. As a result of this extended use, the reactor pit, pressure vessel, control rods, and drive mechanisms are beyond repair. It is contemplated to further modify the reactor to construct a BORAX V to provide continuity of testing and experiments.

OMRE: This project contemplates major modifications and improvements in the OMRE at the NRTS to increase the reactor power level and provide flexible facilities for continued study of organic materials for use as reactor coolants and moderators. Modifications will be made to facilitate loading and removal of fuel elements from the reactor; additional building space will be required for laboratories and to house equipment being tested, such as prototype steam generators, pumps, coolant and moderator storage, etc.

8. Project 59–d–8. Heavy water component test reactor, $8,000,000.

This project provides for the construction of an experimental reactor of the pressurized water type, D_2O moderated and cooled, together with necessary support facilities adjacent to an existing production facility at Savannah River plant to minimize required supporting utilities. No electric generating facilities are planned.

This reactor is planned to permit testing and evaluation for the purpose of improving fuel elements and other critical components for use in large-scale D_2O power reactors. The pressurized water system will be similar to that visualized for a full-scale unit except that the energy of the hot D_2O will be discharged into cooling water. The flow rate and temperature of the heavy water will be measured in order to determine the amount of useful power that could be produced if the necessary equipment were installed and to provide a basis for extrapolation to larger units.

Pressurized heavy water cooled and moderated power reactors constitute one class of reactors which may play an important role in the future of nuclear power. Studies already completed and development and evaluation work already in progress indicate that construction and operation of such a reactor is feasible. The design and operation of a full-scale power reactor will be determined by a number of factors, some of which require the construction and operation of this proposed reactor to acquire the requisite technical data and operating experience.

The preliminary engineering cost estimate is $8 million with approximately $1 million being required for buildings and support facilities, and the balance representing the estimated cost of reactor construction.

9. Project 59–d–9. Fuels Technology Center addition, Argonne National Laboratory, Ill., $5,000,000

This project provides for the expansion of the Fuels Technology Center for work on the development of fabrication methods for low alpha fuel and reactor materials. The structure will be reinforced concrete faced with brick. Approximately one-half of it will be high bay space; the areas included are as follows: foundry and fabrication; ceramics; machine shop; jacketing, coating, welding areas; and equipment as necessary. The present areas are to be maintained for core fabrication; equipment of use in the development program but of little value for major fabrication jobs will be moved to the new facility.

The Argonne National Laboratory has become and is expected to continue to be a major reactor development center. A considerable portion of this overall program involves the design, construction, and operation of experimental reactors. The Engineering Metallurgy Section of the Metallurgy Division of ANL is concerned with the development of reactor components, particularly fuel elements, and when necessary, with the manufacture of cores and other components for experimental reactors.

Present facilities are not adequate enough to carry on both the development and the manufacturing of cores simultaneously. The development of better components must be held in abeyance while the only available equipment is being used for manufacturing purposes. The expansion of the Fuels Technology Center will permit the conduct of development and manufacturing work simultaneously without the necessity of interleaving as at present.

10. Project 59–d–10. Gas-cooled power reactor, $51 million

It is planned to construct a prototype gas-cooled, graphite moderated reactor in fiscal year 1959. Design studies are now being carried out to select a specific reference design for a prototype 40 electrical megawatt plant. Other facilities required, in addition to the reactors systems and facilities to house the reactor and operating personnel, include turbine generator, warehouses, induced draft-cooling power, substation, and necessary utilities.

The need for this facility is based on initiation of a broad United States program for the development of civilian gas-cooled power reactors. Recent intensive design studies have pointed up the potential of gas-cooled, graphite moderated reactors using partially enriched uranium fuel for economic power generation. Development of this potential requires construction and operation of a reactor prototype to obtain construction experience and establish operating characteristics and to provide for the testing of materials and fuel elements for more advanced versions of this concept.

The AEC has determined that construction of this reactor is warranted and desirable. Accordingly, it will invite industrial participation in the development, final design, construction, and operation of a gas-cooled graphite moderated reactor prototype of about 40,000 EKW of electrical output which is the minimum size consistent with the objectives of this project.

In its invitation, the AEC will reaffirm that it is the policy of the Commission to promote the development, construction and operation of nuclear powerplants as justified by their technological status under the best arrangement that can be obtained, accordingly the appropriation shall also be alternatively available for a cooperative program in accordance with section 110 of the fiscal year 1959 authorization act.

In the event a fully responsive proposal for a reactor of this type and developmental potential is not received and judged acceptable for negotiation within a reasonable time after the announcement, the Commission will proceed with immediate construction of a gas-cooled power reactor with total Government financing.

In order to assure maximum rate of progress, the Commission will continue development and design work now underway in connection with this reactor type.

11. Project 59–d–11. Project Sherwood plant, $2 million

This project provides for the construction of supporting installations necessary at the several sites where controlled thermonuclear research is in progress. The controlled thermonuclear program, which has as its goal the controlled release of energy from the fusion of light nuclei, is being actively pursued at four major sites (Oak Ridge National Laboratory, Los Alamos Scientific Laboratory, Princeton University, and the University of California Radiation Laboratory at Livermore) and is also supported by smaller projects at a number of other sites.

Decisions concerning the assembly of rather sizable experimental models and their supporting installations in the controlled thermonuclear program are largely dependent upon the successful operation of smaller models and the resolution of a number of technical and theoretical problems. Recent developments in the control thermonuclear program indicate that the extent of the progress in this field will be sufficiently advanced by fiscal year 1959 to warrant the initiation of one or more models of such size that additional facilities for the development program and housing of machines may be required. Continued progress may be delayed if construction funds are not available for use immediately when needed. To cover these eventualities, this project provides $2 million for the construction of supporting facilities whenever necessary at the several sites where controlled thermonuclear research is in progress.

12. Project 59–XXX. Heavy water power reactor (A-E only), $2,500,000

It is planned to initiate in fiscal year 1959 design of a heavy water cooled and moderated reactor which can use either natural or slightly enriched uranium. Construction authorization is expected to be included in the Commission's fiscal year 1960 request.

The Commission announced in January 1957 that it would be desirable to build a heavy water moderated power reactor which would be operable on natural uranium fuel. No acceptable proposal from industry has been submitted under the existing ground rules of the power demonstration reactor program; therefore it is considered appropriate for the Commission to assume the initiative in furthering this project. It is proposed to proceed with evaluation and preliminary design of a plant of sufficient size to be operable with a reasonable fuel cycle with natural uranium but would be expected to achieve lower power costs with some enrichment of the fuel. It is planned to give industry an opportunity to submit proposals for participation in later stages of the project as the development and design proceed.

13. Project 59–i. General plant project, $6 million

The work contemplated under this project consists of many miscellaneous improvements, alterations, and additions including minor new construction. Similar work is performed annually in order to provide for continuity of operations, improvements in techniques, and reduction in operating costs in the various facilities of the reactor development program. Obligations in fiscal year 1958 will be approximately $5,760,000.

Since many of the items contained herein are recurring in nature, funds for those types of work are requested on past years' experience. The estimate is for the requirements of the following operations offices:

Chicago	$2,900,000
Idaho	2,000,000
Schenectady	600,000
New York	500,000
Total	6,000,000

14. Project 58–e–5. Test installation for classified project, $6,500,000

This project provides for the design and construction of facilities necessary to determine the experimental feasibility of a classified project.

Additional information on this project is contained on classified page 276.

15. Project 58–e–6. Project Sherwood, $5 million

This project was authorized under the same title for fiscal year 1958 at $7,750,000 and $5 million was appropriated in that year. A revised cost estimate totaling $10 million has required new authorization and an additional $5 million for appropriation in fiscal year 1959 to complete the funding of the project.

The project provides for the construction of supporting installations necessary at the several sites where controlled thermonuclear research is in progress. The program which has as its goal the controlled release of energy from the fusion of light nuclei is being actively pursued at four major sites (University of California Radiation Laboratory at Livermore, Oak Ridge National Laboratory, Princeton University, and Los Alamos Scientific Laboratory), and is supported by smaller projects at a number of other sites.

The principal elements comprising the project are set forth below with a comparison to the previously authorized amount.

	Previous authorization	Proposed authorization	Change
1. Princeton University	$5,600,000	$8,600,000	$3,000,000
2. Sherwood Building, Livermore	0	900,000	900,000
3. Additional power, Livermore and Berkeley	550,000	500,000	−50,000
4. Unforeseen construction	1,600,000	0	−1,600,000
Total	7,750,000	10,000,000	2,250,000

One of these requirements ($8,600,000) provides for a two-place construction program on long-term leased or purchased land at Princeton University. The first phase will provide office, laboratory, and other supporting installations for the scientific and operating staff required for the experimental program and for the initial assembly and testing of components for the device. The second phase consists of the building to house the model C device and for the associated energy storage, pulsing equipment, and related mechanical equipment. The increase

in the estimated cost for these installations is due primarily to a required increase in the size and height of the building to house the model C device and an increase in the cost of the powerhouse and transmission line based on preliminary contractor design studies. The device and associated energy storage, pulsing equipment, and related mechanical equipment, estimated to cost $26 million, are budgeted under appropriation "Operating expenses." It is expected that experimentation with the device will begin in fiscal year 1960.

The second and third known requirements cover construction at the University of California Radiation Laboratory at Livermore and Berkeley. One item of $500,000 will provide for additional power facilities for the various experimental devices at Livermore and Berkeley. The other item of $900,000 will provide additional laboratory space for the expanding Livermore program.

16. Project 58–e–11. Sodium reactor experiment modifications, Santa Susana, Calif., $2,200,000

This project provides for modifications and improvements to the sodium graphite reactor experiment (SRE) located at Santa Susana, Calif. It provides for component modifications to incorporate engineering improvement for better performance and improved operating economy. Included will be the removal and replacement of the moderator assembly, removal and replacement of other components, modification or replacement of instrumentation and control devices, and the construction of a sodium flushing system to prepare the SRE for modification work. It will also be necessary to provide solid waste storage.

This project is required to further develop the sodium graphite reactor concept. It will permit additional development work on components of the SRE, and the development of new components incorporating new knowledge subsequently obtained from experimentation. The actual timing of this modification work will depend largely upon operating experience with the SRE as currently designed.

The total estimated cost of this project is $4,700,000. Of this amount, $500,000 was funded in prior years. The balance of $2 million to complete the funding of this project will be sought in fiscal year 1960.

17. Project 58–e–15. Plutonium recycle test reactor, $10 million

This project provides for the construction of a uranium plutonium fuel cycle experimental reactor with necessary supporting facilities consisting of a steel containment building approximately 80 feet in diameter by 121 feet overall height, which will contain the reactor core, heat exchanger, fuel handling equipment and concrete shielding, and also underground provision for a storage basin and transfer of fuel. The service side of the reactor building will be principally of structural steel framing with corrugated cement asbestos siding and frangible roofing, and will be approximately 80 feet wide and 100 feet long.

The reactor itself is a vertical pressure tube type reactor, heavy water moderated and cooled, with a thermal power rating of 70 megawatts. About 35 percent of the fuel elements will be spike enrichment plutonium elements and the remainder will be natural UO_2 elements.

18. Project 57–c–2. Research and development test plant, $12,500,000

This project provides for the construction and modification of laboratory research and development facilities at Los Alamos and the construction and modification of reactor field testing facilities at the Nevada test site. The proposed work contemplated by this project is essential to the Los Alamos Scientific Laboratory nuclear propulsion program (project Rover.)

The cost of this project has increased $2,500,000 over the amount authorized by the Congress for fiscal year 1957. This increase will be applied to the second

increment of construction which covers, but is not limited to, the following types of items:

At Los Alamos:	
Materials test building	$2,017,000
Additional Kiva	743,000
Miscellaneous capital construction	100,000
At Nevada test site:	
New test cell B	1,000,000
Test cell A	500,000
Tank farm modifications	400,000
Additional test stand area	5,520,000
Various modifications of service and support areas and buildings	485,000
Support facilities at Camp Mercury	275,000
Contingency	1,460,000
Total	12,500,000

Estimated obligation in fiscal year 1959 of $12,500,000 represents the final increment in the total estimated cost of this project. The total estimated cost of this project is $27,500,000.

19. Project 56–b–2. Fast power breeder pilot facility (EBR II), $14,250,000

This project is a very important part of the original 5-year plan for nuclear reactor development of commercial powerplants. EBR–I has given technical information such as alpha U–235, shielding of fast reactors, neutron streaming, temperature coefficients, breeding gains, and feasibility of operating a fast sodium-cooled reactor at a moderately high temperature.

EBR–II will be designed and operated more nearly like a full-scale plant including the use of recycled fuel under the actual operating conditions prescribed by both the reactor and the fuel processing system. It will utilize components such as pumps and heat exchangers similar to those of a full-scale plant. Temperatures and operating conditions will be comparable to those of a full-scale plant even though the reactor will be smaller and of less power.

Because EBR–II is a high-performance integrated plant, its operation will yield the performance information which can be extrapolated to full-scale plant operation, including the feasibility and projected cost of fuel recycling. This information is needed to determine the economic feasibility of full-scale central station powerplants.

This facility is to be a completely integrated plant incorporating a nuclear reactor, a steam-electric plant, and a fuel reprocessing and refabricating plant. The reactor is an experimental fast breeder cooled with sodium and fueled with U–235 or Pu. It will produce 62,500 kilowatts of power (heat) which will be converted to 1,250 pounds per square inch and 850° F. superheated steam used to drive a 20,000 kilowatt extraction-condensing high-efficiency steam turbine and generator. Spent fuel will be decontaminated and refabricated into fuel pins for reuse in the reactor. This project will be located at NRTS at a site near the eastern border of the testing station designated as site 16.

Total estimated cost of this project is $29,100,000 of which $14,850,000 has been funded in prior years. The fiscal year 1959 appropriation request of $14,250,000 will complete the funding requirements of this project.

20. Project 58–e–16. Destroyer reactor facility, West Milton, N. Y., $16,120,000

This project consists of a land prototype (D1G) of the destroyer nuclear propulsion plant and related facilities required for support and test operations of the plant. This prototype will consist of a section of the destroyer hull containing a reactor compartment with one reactor and with steam-generating equipment, including related controls and auxiliary systems. The destroyer itself will have 2 such reactor plants and 2 shafts. The project will be constructed at the AEC West Milton, N. Y. site; the hull will be installed in the sphere that was previously used for the submarine intermediate reactor (S1G) prototype. Maximum use will be made of existing facilities at the site.

The Navy has included a nuclear-powered destroyer in the fiscal year 1959 shipbuilding program in order to evaluate this ship at the earliest practicable time. In order to meet the Navy's requirements for this ship, the D1G prototype must be in operation in early fiscal year 1961. The Knolls Atomic Power Laboratory is designing the propulsion plant on an "urgent" basis. The reactor design

will include advances in the area of nuclear physics, heat transfer, reactor control, fuel-element design, and core life.

The total estimated cost of $35 million is based on installation of the facility at West Milton, N. Y., and reflects current reactor-plant-cost experience. The principal contractor is the General Electric Co.

To accelerate initiation of work on this project in conformance with the Navy's fiscal year 1959 shipbuilding program, $3,380,000 was obligated in fiscal 1958 for architect-engineer services and to order reactor-plant components (long-lead) for the prototype. Appropriation required after fiscal year 1959 to complete the construction of the project will be $15 million.

SECTION B

The projects comprising section B which have been previously authorized and for which funds have previously been appropriated but are now carried over into fiscal year 1959 are:

Project No.	Title	Total estimated cost	Actual obligations through fiscal year 1958	Estimated obligations, fiscal year 1959	Funding required after fiscal year 1959 to complete project
58-e-1	Power reactor development acceleration project	$10,506,000	$5,166,000	$5,340,000	0
58-e-3	Fuels Technology Center, Argonne National Laboratory, Illinois	12,000,000	1,720,000	10,280,000	0
58-e-4	Modifications and additions, aircraft nuclear propulsion ground test plant area No. 1, National Reactor Testing Station, Idaho	8,000,000	1,096,000	5,404,000	$1,500,000
58-e-5	Test installations for classified project	(1)	0	457,000	0
58-e-8	Hot cells	2,450,000	1,810,000	640,000	0
58-f-1	Waste-storage tanks, National Reactor Testing Station, Idaho	2,900,000	2,700,000	200,000	0
58-f-2	Hot pilot plant	2,000,000	200,000	1,800,000	0
58-111	Cooperative power-reactor demonstration program	47,998,000	24,756,000	13,540,000	9,702,000
57-c-3	Modifications and expansion of ANP ground-test facilities, area No. 1, Idaho	15,000,000	11,304,000	3,696,000	0
57-c-9	MTR hot-cell extension, National Reactor Testing Station	310,000	30,000	280,000	0
57-g-1	Addition to electrical power system, National Reactor Testing Station	3,800,000	2,080,000	1,720,000	0
57-xxx	Nuclear-powered merchant-ship reactor	22,250,000	19,177,000	3,073,000	0
56-b-6	ANP program plant and test area, Arco, Idaho	13,000,000	7,945,000	2,055,000	3,000,000
56-g-6	Research reactor, Philippine Government	500,000	0	500,000	0
	Total	[2] 141,171,000	77,984,000	48,985,000	14,202,000

[1] See sec. A, p. 259.
[2] Includes $457,000 for project 58-e-5 which is described in sec. A.

HEAVY-WATER NATURAL URANIUM REACTOR

Mr. CANNON. The other day in discussing international markets for natural uranium reactors, you indicated that the heavy-water natural uranium reactor is, as you expressed it, a good bet. That is using familiar racetrack parlance.

You have $8 million in this budget for construction of a prototype. Mr. Commissioner, if this is a good bet for sale in foreign countries, can we afford a gamble on skipping your $8 million prototype and going directly to a large-scale reactor?

Mr. FLOBERG. I would like to clear that up.

Mr. CANNON. Yes; if you will.

Mr. FLOBERG. This is not a prototype. This is a component test reactor, and it is an essential step in the evolution of this type.

Mr. CANNON. You say it is an essential step. Would you say it is an imperative step?

Mr. FLOBERG. Yes; it is an unavoidable step, because the components of the reactor will have to be tested in a facility of this type. I do not know of any way to dodge that step in the development of this type of reactor.

Mr. DAVIS. Yes. This type of reactor has been under study and development by Du Pont for almost 2 years, and it has been their conclusion that it is by far the most prudent course to go ahead with the component test reactor and to defer until the completion of further design studies initiation of a project for a large-scale heavy water power reactor.

That is a conclusion which we have reviewed with them and have concurred with.

DESIGN STUDIES

Mr. CANNON. The Joint Committee is authorizing $6 million for project 59–d–13 design studies on 3 reactors. Apparently you requested $4 million for 2 such studies and were turned down.

What type reactors are these which have been deferred and, in your opinion, would it be desirable to proceed at this time on all three of them?

Mr. FLOBERG. I shall ask Mr. Burrows to answer that, because I really did not get the question.

Mr. BURROWS. Yes, sir, that provided for studies of advanced types of water reactors, either boiling or pressurized water, and possibly advanced designs of one other type of reactor which might be an organic moderated reactor, for example.

Mr. CANNON. There are fields here which ought to be explored, then.

Mr. FLOBERG. The answer to that is "Yes, sir." These are only designs, you understand.

Mr. CANNON. Yes; I appreciate that.

The Joint Committee is also authorizing a study of a reactor of advanced design capable of using superheat. Tell us something about that.

Mr. FLOBERG. Mr. Davis will respond to that question.

Mr. DAVIS. As I understand it, this is an item to provide again for a design study possibly with some experimental work on a reactor which would utilize the nuclear heat to superheat the steam. Our pressure boiling and pressurized water reactors produce steam which is saturated, and it is not superheated as steam is for conventional modern powerplants.

We have work going on on this already at Argonne, and some other work at other places on a smaller scale. This would be, as I understand it, to authorize actual preliminary design of a reactor which would embody this principle.

Mr. CANNON. This is also a desirable undertaking at this time?

Mr. DAVIS. We feel that it is quite essential to ultimately get to the point where we can superheat steam with the nuclear heat itself.

Physical Research Program

NEED FOR CERAMICS AND METALS-DEVELOPMENT BUILDINGS AS A CONTRIBUTION TO REACTOR TECHNOLOGY ADVANCEMENT

Mr. Cannon. You apparently requested funds, which the Budget Bureau turned down, for a ceramics building at Oak Ridge and a metals-development building at Ames, Iowa. In your opinion, would the provision of these buildings advance reactor technology?

Mr. Floberg. Yes, Mr. Cannon. I can give you just a brief statement of the background of that.

One of the biggest problems in the whole reactor field is materials metallurgy. One of the problems there has been the inadequate relative degree of effort on fundamental scientific questions having to do with metals and materials. Both of these establishments referred to are very competent to work in this particular field. Each of them has made substantial contributions in the past.

In order to accelerate progress in these fields these projects will be constructed.

RESEARCH REACTOR FOR PHILIPPINE GOVERNMENT

Mr. Cannon. On page 273 you show half a million dollars for a research reactor for the Philippine Government which was authorized in 1956. That is going back pretty far. Why has this not been advanced before this time?

Mr. Floberg. The Department of State has negotiated this project with the Philippine Government, and I believe the offer is still an open one, but it has moved slowly.

Mr. Cannon. What is your conclusion as to need of the money this year?

Mr. McCarthy. We cannot be entirely sure where the negotiations stand, Mr. Chairman. We have been checking periodically with the State Department to see that the offer is still open to the Philippine Government, and they have indicated they desire the reactor. They have not yet determined upon the type that they would need.

Mr. Taber. If the gentleman would yield.

Is it not a fact that the Philippine Government has approved a contract for this?

Mr. McCarthy. I am not aware of it, sir. I do not believe they have as of this time, Mr. Taber. There have been negotiations and discussions with the Philippine Government. They are still desirous of accepting this offer. This was made some time ago by the State Department. I do not think it has been completed.

Mr. Cannon. We realize, of course, Mr. Commissioner, that when the war starts we will have to fight with what we have on hand. Stockpiling materials which will be useful in production after the war starts is long since outmoded.

That might have been all right during the Peloponnesian War or at the Battle of Hastings or even at Gettysburg. We won the last two wars by defeating our enemy in production. We outproduced them. We had to have strategic materials at that time.

But this war will be so short, will be over so quickly, will be so decisive, that we must fight with what we have at the time. There will be no chance of producing anything we do not have when the war starts. So stockpiling is out of the question. There will be no chance to utilize any of it.

That being true, if we are to get ready at all, we have to get ready now, ahead of time.

PRIORITY OF DEFERRED RESEARCH PROJECTS

We provided for the fiscal year 1957 five items.

1. A permanent research building at Oak Ridge, $5.78 million.
2. Physics building, Brookhaven National Laboratory, $2.14 million.
3. Engineering building, Brookhaven National Laboratory, $1.879 million.
4. Engineering service building, University of California Radiation Laboratory, $1.080 million.
5. Conversion of accelerator design building, University of California Radiation Laboratory, $0.3 million.

A total of $11,179,000.

For some reason the Bureau of the Budget refused to release funds for these projects as they were authorized and appropriated.

In view of the vital importance to the Nation's future of a vigorous and effective basic-research program, do you think we should again provide for those five items?

Mr. FLOBERG. I believe the answer to your question, Mr. Cannon, is that the things we have in there now have become of supervening importance and priority even in relation to these. I would like to be corrected by Dr. Williams if I am wrong on that.

Dr. WILLIAMS. Mr. Cannon, these items are long needed, and the need for them still continues, and they are of high priority.

Mr. CANNON. There is nothing in this program which supersedes that need?

Mr. FLOBERG. Not superseding the need for them, but may be superseding the relative priority of them, though.

Mr. CANNON. Any questions, gentlemen?

Mr. KIRWAN. No questions.

Mr. CANNON. Dr. Fenton?

REACTOR DEVELOPMENT PROGRAM

GAS-COOLED, GRAPHITE-MODERATED REACTOR

Mr. FENTON. On your reactor-development program you have an item on page 259, 59–d–10, gas-cooled power reactor. In your justifications on pages 265 you say that the Commission has determined that the construction of this reactor is warranted and desirable. We note that there is a division among certain people as to whether that is correct or not.

In connection with this proposed gas-cooled, graphite-moderated reactor, I would like to quote a few prominent atomic experts on the lack of need for or justification of this proposal, and then ask for your comment on their statements.

Dr. Chauncey Starr, president of the American Nuclear Society, and vice president of the Atomics International, said:

No reactor of the gas-graphite type, either prototype or full scale, would be technically useful to our national reactor program when considered in relation to the cost involved.

Francis McCune, vice president of General Electric, said he feels that—

the construction of a gas-cooled reactor might well follow a research and development program that would better define the future potential of this concept.

H. D. Smyth said:

If the British were not building power reactors at all, I would feel that other types were more attractive for investigation than gas-cooled, graphite-moderated reactors. It seems unwise to dilute our efforts by duplicating theirs.

He says further:

I believe other reactor types should have higher priority.

Is it not true that a number of prominent scientists at your own laboratories seriously question the advisability of constructing the proposed gas-cooled, graphite-moderated reactor—Alvin M. Weinberg, R. Philip Hammond, and David K. Hall being among those who have expressed some doubts?

Mr. Floberg. I wonder if those quotations are with reference to a natural uranium fueled reactor. If they were, it would be hard to disagree with them. If they were not and if they were with specific reference to what we have in mind, then I suppose the answer to that is that technicians disagree just as much as lawyers do.

I would like Dr. Davis to comment with specific reference to both Dr. Weinberg's views and the other quotations, if he is familiar with them.

Mr. Davis. I believe those are out of the report by the Joint Committee—letters which were submitted to them.

Mr. Fenton. That is right.

Mr. Davis. Of course, there has been a considerable difference of opinion by the various reactor experts and other people concerned about the desirability of following the gas-cooled reactor concept. I think much of this has been directed at the lower temperature natural uranium reactors, and not necessarily at the high-temperature enriched gas-cooled reactor.

The bulk of the experts seem to feel that the general area of the higher temperature, slightly enriched reactors probably deserves to be explored. There are some differences of opinion as to just exactly how it ought to be explored and on what time scale and just exactly what the design of the experimental reactor of this sort ought to be.

But I believe the consensus we have from the various people—and I might add this does include Dr. Weinberg, who has worked with us closely on this, for one—is that they are quite enthusiastic about the experimental reactor which is proposed here, which is a relatively small reactor of that particular type and which is designed to explore advanced types of fuel elements, higher temperatures, and higher efficiencies, utilizing enriched uranium.

Mr. Fenton. You do feel, then, that this item is justified.

Mr. Cannon. May I ask, Is there at this time any concrete prospect of a proposal, either from a co-op or from a corporation, of joining you in a proposition to develop this item?

Mr. DAVIS. I think I would have to say that the chances of this are probably not very great, although there are some people who are thinking about it. I believe the time scales set forth will be very difficult for them to meet.

Mr. CANNON. How much time is allotted under the bill?

Mr. DAVIS. My recollection is that 30 days are allowed before proposals are solicited, 60 days for their receipt, and 90 days to arrive at the contract terms and submit them to the Joint Committee.

Mr. CANNON. You see no immediate prospect, then, of action within that time?

Mr. DAVIS. These types of proposals generally require that the people who are interested have time to make their own design studies and cost estimates and evaluations, to work out with the various suppliers and the people who are concerned the details of any proposal.

The time involved here would be far shorter than the time required so far for companies or groups of companies which were interested to work out a sound proposal. I believe there is some interest in this, but I cannot state specifically whether anyone would be able to meet this kind of deadline or not, at the present time.

Mr. CANNON. Dr. Fenton.

Mr. FENTON. I think that is all, Mr. Chairman.

Mr. TABER. I wonder, Doctor, why the time is fixed so short that it will be very difficult for people to submit proposals, and what would be necessary to loosen it up.

Mr. DAVIS. These time periods were set forth in the bill by the Joint Committee.

Mr. TABER. They are set forth in the report, or the bill?

Mr. DAVIS. They are set forth, I believe, in the bill, and also in the report.

Mr. FLOBERG. That is correct.

Mr. TABER. How much time is needed for getting in a proposal of this kind?

Mr. DAVIS. I can only guess at that, sir, but my guess would be that the time required for this kind of proposal would certainly be on the order of 4 months rather than 2 months, and even this might be somewhat short for some of the interested groups.

Mr. TABER. I think that is all.

(Off the record.)

Mr. CANNON. The committee will stand adjourned.

APPENDIX

Weather-Reporting Stations Closed

(The following information was supplied in response to interrogation on p. 564:)

Weather Bureau Stations Closed, January 1950–June 1958

WEATHER BUREAU OFFICE CLOSED AT FOLLOWING LOCATIONS IN UNITED STATES

Albany, Ga.
Anniston, Ala.
Baker, Ore.
Beaumont, Calif.
Bear Mountain, N. Y.
Big Springs, Tex.
Bowling Green, Ky.
Butte, Mont.
Canton, N. Y.
Charles City, Iowa
Curwensville, Pa.
Davenport, Iowa
Eastport, Maine
Elkins, W. Va.
Ellensburg, Wash.
Joliet, Ill.
Kelso, Wash.
Melbourne, Fla.
Mount Washington, N. H.
North Head, Wash.
Oswego, N. Y.
Palestine, Tex.
Park Place, Pa.
Payson, Ariz.
Petersburg, W. Va.
Port Angeles, Wash.
Rock Springs, Wyo.
St. Paul, Minn.
San Pedro, Calif.
Santa Catalina, Calif.
Stevenson, Wash.
Tacoma, Wash.
Terre Haute, Ind.
Troutdale, Oreg.
Urbana, Va.

WEATHER BUREAU STATION CLOSED AT FOLLOWING PLACES OVERSEAS OR IN TERRITORIES WHERE OBSERVATIONS WERE NEEDED FOR INTERNATIONAL AIR COMMERCE

Galena, Alaska
Gambell, Alaska
Keflavic, Iceland
Midway Island, Pacific
Northway, Alaska
St. Croix, V. I.
Santa Isabella, P. R.
Thule, Greenland
Umiat, Alaska
Wales, Alaska

WEATHER BUREAU CITY OFFICE CLOSED AT FOLLOWING LOCATIONS AND GENERAL PUBLIC SERVICE AS WELL AS AVIATION WEATHER SERVICE NOW CONSOLIDATED AT LOCAL AIRPORT

Akron, Ohio (Municipal Airport)
Atlanta, Ga.
Baltimore, Md.
Binghamton, N. Y.
Charlotte, N. C.
Charleston, S. C.
Cleveland, Ohio
Columbia, Mo
Columbia, S. C.
Columbus, Ohio
Detroit, Mich.
Duluth, Minn.
Erie, Pa.
Grand Rapids, Mich.
Helena, Mont.
Honolulu, T. H.
Indianapolis, Ind.
Jacksonville, Fla.
Key West, Fla.
LaCrosse, Wis.
Lansing, Mich.[1]
Lincoln, Nebr.

[1] At this location the airport office was consolidated at the downtown location.

WEATHER BUREAU CITY OFFICE CLOSED AT FOLLOWING LOCATIONS AND GENERAL PUBLIC SERVICE AS WELL AS AVIATION WEATHER SERVICE NOW CONSOLIDATED AT LOCAL AIRPORT—continued

Louisville, Ky.
Madison, Wis.
Milwaukee, Wis.
Mobile, Ala.
Montgomery, Ala.
Nashville, Tenn.
Norfolk, Va.
Oklahoma City, Okla.
Philadelphia, Pa.
Phoenix, Ariz.
Port Arthur, Tex.
Providence, R. I.
Raleigh, N. C.
Richmond, Va.
Salt Lake City, Utah
San Juan, P. R.
Springfield, Ill.
Topeka, Kans.

Difference in Radar Used by Weather Bureau and CAA

(The following information was requested on p. 598:)

Statement on Differing Requirements for Air Traffic Control and Weather Radars

The following is a discussion of the basic differences between the operational and technical requirements that preclude use of air traffic control surveillance radar for weather detection and tracking.

Air traffic control radars present only a plan view of the area under surveillance. To maintain constant surveillance of aircraft, the antenna must rotate continuously in the horizontal and must produce a beam which is broad in the vertical. In addition, maximum receiver gain must be employed to insure the detection of all aircraft within range of the radar.

Everything possible is done to eliminate weather echoes from the scope of air traffic control radars so that aircraft can be detected at all times. The moving target indicator causes the radar to display only targets whose motion toward or away from the radar is higher than a certain threshold speed. A relatively low radar frequency is employed in many of these radars which detects only the heavier precipitation. Circular polarization is used on many air traffic control radars. At the radar return from water droplets is generally circular or elliptical, the circular polarized beam almost completely cancels the return from water droplets. Every possible effort is being made by agencies concerned with air traffic control to eliminate weather from the radar presentation.

Weather detection radars must present to the meteorologists not only a plan or horizontal view, but also a vertical presentation which allows identification of precipitation types and intensities, turbulent clouds, freezing levels, rate of growth of vertical clouds, and other indications of weather processes of vital importance to the forecaster. The radar meteorologist must adjust the receiver gain to differentiate between clouds and precipiation, to aid in determining the intensity of echoes, and to bring out the hard "cores" of storms which are indicative of the heaviest rain or hail. A very narrow or conical beam is employed in weather radars, in contrast to the broad vertical beams of air traffic control radars, to enable the detection of small-scale motions and other characteristics present in weather formations. A relatively high frequency is employed in weather radars to provide optimum weather detection capabilities needed for analysis of cloud structures. To obtain a vertical structure presentation, the antenna must be stopped when pointing toward a storm or precipitation area and the antenna tilt control operated to cause the antenna to scan up and down.

Governmentwide Research in Meteorology

(The following information was supplied in response to interrogation on pp. 599 and 600:)

Statement on Weather Research in the Federal Government

In preparing the summary requested by the committee covering expenditures by the Federal Government for research in meteorology, it is necessary to distinguish between the science of the atmosphere in general as it is developing

since artificial satellites were launched last year and the science of meteorology as it relates primarily to weather and climate. Although many atmospheric phenomena are of common concern to both of these branches of science, the figures given in the following table pertain to meteorology in the sense of weather, climate, and the elements—wind, clouds, rain, and so on. The world wars and the rapid growth of air commerce and military aviation have greatly increased the importance of meteorology and speeded its development. Because of the tactical importance of weather in military operations, there has been a great increase in military research projects in meteorology since 1940. To some extent there has also been an increase in meteorological research by other Government departments whose responsibilities are closely related to factors of weather and climate. In many cases these research projects are identified with some other activity or program under the cognizance of the respective department. Separate cost accounting was not set up for meteorological research phases, but the following are indicative of the sums involved. These figures represent the totals for research in meteorology under contract with the Federal Government by colleges, universities, foundations and other non-Government institutions during fiscal year 1958. They do not include meteorological research carried on directly by Federal Government research organizations. It is estimated that this amounted to approximately $8 million during 1958, including $2 million for special observations in connection with the International Geophysical Year.

Meteorological research during fiscal year 1958 by universities and other private research institutes under contract with Federal Government

[Amounts in thousands of dollars]

Subject of research	Army	Navy	Air Force	Weather Bureau	National Science Foundation	AEC
Upper atmosphere studies	216	24	219	13	12	----------
Weather forecasting research including studies of the general circulation, numerical weather prediction and severe storms	----------	263	708	197	----------	----------
Arctic weather research	----------	----------	55	----------	----------	----------
Tropical weather research	----------	----------	45	30	----------	----------
Physical meteorological research	----------	248	916	105	276	484
Climatological research	----------	15	----------	15	49	----------
Instrumental development	----------	449	1,629	106	30	----------
Miscellaneous	33	12	74	8	----------	----------
Total	249	1,011	3,646	474	367	484
Grand total	6,231					

From the foregoing it is seen that the total expenditure by the Federal Government for direct research in meteorology during fiscal year 1958 was approximately $14,231,000, including special observations in connection with the International Geophysical Year which is not an annual recurring cost. The Weather Bureau's expenditure for research was $2,600,000. This includes $473,000 under contract with universities. The remainder went for studies of hurricanes, tornadoes and other weather forecasting and storm warning research including certain costly operating facilities, such as data-recording devices on hurricane research aircraft.

In comparison with the vital influence of weather and climate in human affairs and the enormous savings in life and property through predictions of floods and storms, these expenditures for research are small. Moreover, in military operations an accurate foreknowledge of weather may make the difference between success and failure in a major mission or even in an entire campaign. In these operations involving billions of dollars and perhaps national security itself, the millions spent for meteorological research are a relatively small investment in future knowledge with great economic, social and political (national) promise.

With reference to division of responsibility for research in meteorology and questions of possible duplication, the interagency working groups provide excellent coordination. The Joint Meteorological Board under the Joint Chiefs of

Staff meets regularly and agrees upon plans for meteorological operations by the respective agencies. For coordination in civil meteorological activities, the Subcommittee on Meteorology of the Air Coordinating Committee enables the interested offices to reach agreements on plans and operations so that duplication is avoided.

The statutes provide for the Weather Bureau to carry on research in problems relating directly to storms and other weather disturbances, particularly for purposes of forecasting and storm warnings. This research includes also projects in experimental meteorology involved in better understanding of the genesis, intensity and movement of storms and other atmospheric disturbances involving weather and climate. During the past 10 years many questions have been raised about weather control or modification. As result of public interest in the possibilities, legislation has recently been enacted authorizing the National Science Foundation to sponsor research in weather modification. Although close coordination will be needed to avoid unnecessary duplication in experimentation, the approach in research for weather modification by the National Science Foundation differs from the approach used in research and experimentation for weather forecasting. These programs can be planned so that they supplement each other and add to the common knowledge required in both fields.

There are many specialized meteorological problems in various general fields of business and industry. In agriculture, for example, each plant and animal has its own peculiar susceptibilities to certain factors of weather and climate. Aviation also has its own particular weather problems. In the medical profession there is a multitude of problems involving bioclimatology, and biometeorology—for example, air pollution of cities as result of industrial effluents. The importance of problems of weather and climate in the many different fields of human activity is certain to increase in the future. It has been the policy of each agency to carry on its own research in the highly specialized problems in its particular field except when circumstances have been such that the most efficient arrangement appeared to be for the Weather Bureau to carry on the research project under contract with the other agency concerned and by transfer of funds. This pactice has been in line with the general policy that the Weather Bureau should be the agency to conduct research in the common basic problems of meteorology, especially those relating directly to the Bureau's responsibility for weather reporting, forecasting and storm warnings for the general public, leaving to the other departments the responsibility for specialized research in meteorology relating primary and often exclusively to their own individual departmental responsibilities.

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